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COMMERCIAL FISHERIES REVIEW

A review of developments and news of the fishery industries
prepared in the BUREAU OF COMMERCIAL FISHERIES.

Joseph Pileggi, Editor
H. M. Bearse, Assistant Editor

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CONTENTS

COVER: Part of deckload of squid on board a California vessel. About 3.5 million pounds of squid were delivered between November 1957 and March 1958 to California Terminal Island canneries. Most of the catch is canned in its own ink for export to the Philippines and Greece. Fishing for squid in Southern California waters is done at night with a 1,500-watt lamp hung from the mast or boom of a drifting boat to attract the squid to the surface. As soon as the school has surfaced, the night light is lowered to five or six feet above the water and brailing begins. Note the brail, which is power-operated. (See pp. 19 & 20 of this issue.)

COMMERCIAL FISHERIES REVIEW

May 1959 Washington 25, D.C. Vol. 21, No. 5

THE ROLE OF HOLDING POUNDS IN THE MAINE LOBSTER INDUSTRY

By Robert L. Dow,* Donald M. Harriman,** and Leslie W. Scattergood***

CONTENTS

INTRODUCTION

The American lobster (Homarus americanus) is one of the most valuable resources of the western North Atlantic. This species is caught in commercial quantities between New Jersey and Newfoundland, and the total catch in recent years (1953-1957) has averaged about 76,000,000 pounds, worth $27,000,000 to the fishermen. Since most of these crustaceans are sold alive, industry has had to develop means of storing the lobsters from the time they are caught by the fishermen until they enter the retail trade. It is the purpose of this paper to discuss the important role that lobster holding pounds play in these storage activities.

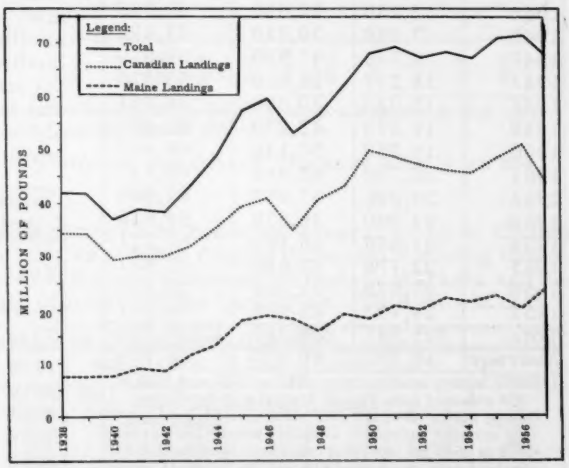

Fig. 1 - Landings of lobsters in Maine and Canada, 1938-1957.

YEARLY AND SEASONAL TRENDS OF THE FISHERY

The need for storing large quantities of lobsters is apparent when the yearly and particularly the seasonal fluctuations in the landings are demonstrated. Scattergood and McKown (1951) showed that lobster production had been increasing in the western North Atlantic between 1921 and 1949. It is evident from figure 1 and table 1 that this upward trend has continued. Because Maine is by far the principal United States producer of lobsters, we are omitting other states from our discussion.

The United States remains the principal market for Canadian lobsters (figure 2 and table 2). It is not now possible to determine accurately the percentage of Canadian lobster landings that are exported to the United States, however, from the data

* Director of Marine Research, Maine Department of Sea and Shore Fisheries, Augusta, Me.

** Marine Resources Scientist, Maine Department of Sea and Shore Fisheries, Newagen, Me.

*** Director, Fishery Biological Laboratory, Division of Biological Research, U. S. Bureau of Commercial Fisheries, Boothbay Harbor, Me.

in tables 1 and 2, it appears that between 59 and 71 percent were shipped into the States during the last 10-year period. This is a minimum figure, because fresh or frozen lobster meat is included with live whole lobsters in the import classification "lobsters, not canned." During the seasons when Canadian lobsters are imported, a pound of lobster meat represents about four pounds of live lobsters. To state that between 65 to 80 percent of all Canadian lobsters are destined for export to the United States would not be an extravagant estimate.

Of particular interest to the economy of the fishery are the marked seasonal landing fluctuations. Figure 3,

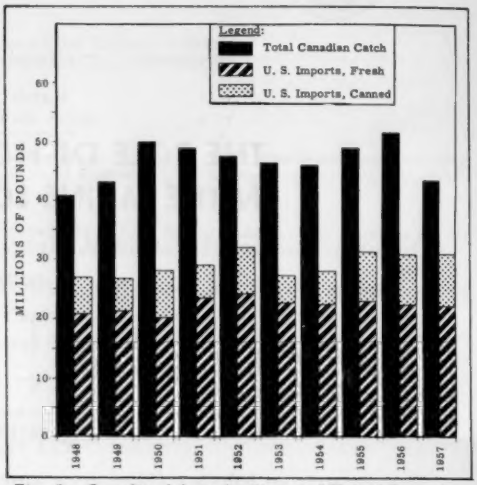

Fig. 2 - Canadian lobster landings and United States imports of fresh or frozen and canned (hermetically sealed) Canadian lobsters, 1948-1957.

table 3 and 4 show that most of the Canadian lobsters are imported during the months of May and June, while the Maine landings are principally in August and September. Together, Canadian imports and Maine landings result in a peak supply during the period May to September.

Table 1 - Maine and Canadian Lobster Landings, 1938-1957[1/]

Year	Maine	Canadian	Total
	(1,000 Lbs.)		
1938	7,659	34,324	41,983
1939	7,571	34,223	41,794
1940	7,643	29,479	37,122
1941	8,937	30,181	39,118
1942	8,404	30,162	38,566
1943	11,468	32,009	43,477
1944	13,250	35,643	48,893
1945	17,988	39,510	57,498
1946	18,779	41,099	59,878
1947	18,277	35,059	53,336
1948	15,923	40,858	56,781
1949	19,273	43,210	62,483
1950	18,353	50,140	68,493
1951	20,759	48,968	69,727
1952	20,036	47,652	67,688
1953	22,300	46,518	68,818
1954	21,668	46,103	67,771
1955	22,718	48,959	71,677
1956	20,572	51,608	72,180
1957	24,403	43,688	68,091
Total	325,981	809,393	1,135,374
Average	16,299	40,470	56,769

1/Maine lobster landings from 1938 to 1940 and 1942 to 1956 obtained from Fishery Statistics of the United States; Maine 1941 and 1957 data from Maine Landings monthly bulletins. Canadian lobster landings from 1938 to 1946 for provinces other than Newfoundland obtained from the Annual Fisheries Statistics of Canada and those for 1947 taken from the Monthly Review of Canadian Fisheries Statistics. The 1948 landings taken from Monthly Report of Eastern Fisheries Division, Halifax, N. S. 1949 to 1951 data taken from Monthly Review of Canadian Fisheries Statistics, Dominion Bureau of Statistics. 1952-1957 taken from Annual Report of the Federal Department of Fisheries. Newfoundland statistics for 1938-1939 obtained from Templeman 1941, Newfoundland Government Research Bulletin No. 11 (Fisheries), and figures for 1940 to 1948 taken from Annual Reports of Newfoundland Fisheries Board. The 1949 to 1957 figures are taken from the Annual Reports of the Federal Department of Fisheries.

Table 2 - Canned and Fresh or Frozen Lobster Imports from Canada, 1958-1957[1/]

Year	Canned Changed to[2/] Live Weight	Fresh or Frozen[3/]	Total
	(1,000 Lbs).		
1948	6,164	20,850	27,014
1949	5,483	21,323	26,806
1950	8,038	22,046	30,084
1951	5,994	23,558	29,552
1952	7,929	23,197	31,126
1953	4,743	22,611	27,354
1954	5,758	22,468	28,226
1955	8,455	22,962	31,417
1956	8,555	22,484	31,039
1957	8,815	22,218	31,033

1/Data from U. S. Bureau of the Census, United States Imports of Merchandise for Consumption, FT110 Reports.

2/These figures are obtained by multiplying the import canned meat data by a factor of 4.0, which is the estimated number of pounds of live lobsters that yield one pound ot canned (hermetically-sealed) meat.

3/This includes lobster meat that is not in hermetically-sealed cans.

Figure 4, tables 4 and 5 indicate that the seasonal volume of imports from Canada has a trend somewhat similar to that for Canadian landings. Delayed shipments of lobsters that have been held in live storage in Canada are responsible for the instances where the imports exceed the landings, for example, during July and November to April. There are several reasons why the May Canadian landings markedly exceed the United States imports: some of the lobsters are processed into canned or frozen meat; some are put into live storage; and a time lag exists between the landings of the lobsters in Canada and their shipment to the United States.

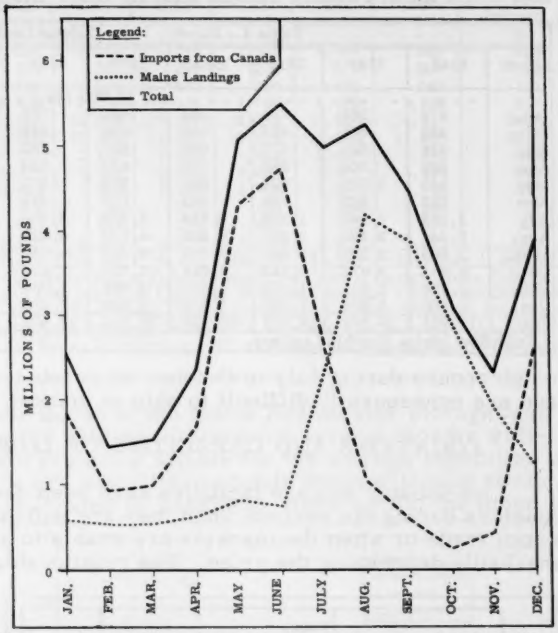

Fig. 3 - Monthly Maine lobster landings and imports of fresh and frozen Canadian lobsters, 1948-1957.

The seasonal variation in the supply of lobsters is an important factor in the price of lobsters. Figure 5 and table 6 show the mean monthly prices for landed Maine lobsters. It is apparent that average prices are usually highest during the months January to April, which is the period when Canadian and United States lobster landings are at the lowest. In the remainder of the year, the price drops as Canadian lobsters begin to be imported and remains low while the Maine fishery is at its peak. The summer tourist season provides a large market for live lobsters and, when that season has ended in September, the prices increase slowly as the catches diminish.

The reasons for the seasonal fluctuations are based on several factors. Canada has a system of closed seasons that allows lobster fishing principally during those months when live lobsters are able to withstand shipment to distant markets and the cooked lobsters produce a good yield of meat for the canneries. This means that

Table 3 - U. S. Imports of Lobsters (Fresh or Frozen) 1948-1957 1/

Month	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	10-Year Average
	(1,000 Lbs.)										%
Jan.	1,617	1,676	1,909	1,706	2,023	2,214	1,777	1,832	1,731	2,308	8.4
Feb.	668	743	762	1,355	903	952	1,078	1,026	1,190	892	4.3
Mar.	645	869	619	1,320	978	880	1,039	827	666	1,264	4.2
Apr.	2,237	1,854	1,325	2,050	1,937	1,661	1,688	1,704	1,308	1,551	7.7
May	3,571	4,352	4,149	4,892	3,980	4,614	4,284	4,898	4,741	3,800	19.3
June	5,056	4,430	5,181	3,983	4,772	4,329	4,987	5,198	5,356	4,418	21.3
July	2,626	2,181	2,482	2,334	2,339	2,790	2,844	2,856	3,003	3,031	11.8
Aug.	834	1,069	1,287	1,104	960	1,065	1,115	1,243	1,084	1,380	5.0
Sept.	507	650	659	678	731	436	517	557	474	830	2.7
Oct.	231	318	335	391	289	169	185	212	232	190	1.1
Nov.	432	379	386	500	701	698	397	286	250	246	1.9
Dec.	2,426	2,802	2,951	3,245	3,584	2,802	2,557	2,323	2,449	2,308	12.3
Total	20,850	21,323	22,045	23,558	23,197	22,610	22,468	22,962	22,484	22,218	100.0

1/From customs information available at Bureau of Census office, New York City, N. Y.

hard-shelled, rather than newly-moulted or thin-shelled, lobsters are desired. Lobster fishing is prohibited in most of the Canadian areas during the summer-autumn moulting season. The lobster season is also closed during the winter months in

many Canadian regions which are normally ice-bound. Along the Nova Scotia coast, where ice is no problem, a winter fishery is allowed.

In Maine, there are no closed seasons, except for around Monhegan Island. Lobsters are most readily caught shortly after moulting; as a result, most of Maine's

Table 4 - Monthly Maine Lobster Landings, 1948-1957 1/

Month	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	10-Year Average
	(1,000 Lbs.)										%
Jan.	472	561	724	944	823	788	667	785	527	534	3.3
Feb.	433	461	457	616	630	548	561	476	430	507	2.5
Mar.	426	509	378	626	567	560	573	573	369	602	2.5
Apr.	669	761	586	772	630	630	578	595	489	652	3.1
May	982	1,008	991	927	803	673	568	666	750	949	4.0
June	862	807	723	883	729	915	623	650	587	816	3.7
July	1,193	1,949	1,885	2,819	2,393	3,402	2,877	2,931	1,315	2,984	11.5
Aug.	2,446	3,384	3,597	4,348	4,720	4,726	5,257	5,417	3,767	4,786	20.6
Sept.	2,883	3,697	3,635	3,361	3,792	4,062	4,138	4,761	4,509	4,489	19.1
Oct.	2,441	3,072	2,542	2,614	2,305	2,616	2,876	2,830	4,113	3,959	14.3
Nov.	1,956	1,807	1,650	1,611	1,594	1,905	1,889	1,888	2,307	2,556	9.3
Dec.	1,160	1,256	1,185	1,238	1,050	1,475	1,061	1,146	1,409	1,569	6.1
Total	15,923	19,272	18,353	20,759	20,036	22,300	21,668	22,718	20,572	24,403	100.0

1/Data from Maine Monthly Landings.

catch occurs during July to October when lobsters are not particularly hard-shelled and are consequently difficult to ship to market.

LOCATIONS AND CAPACITIES OF LOBSTER-HOLDING FACILITIES

Live-lobster storage facilities have been devised to provide means of holding lobsters during the periods when they are soft-shelled and difficult to ship to the retail trade or when the markets are unable to absorb greater quantities without markedly depressing the price. The relationship between the seasonal values and volume of lobster landings would be much more marked, if means of storing lobsters were not available.

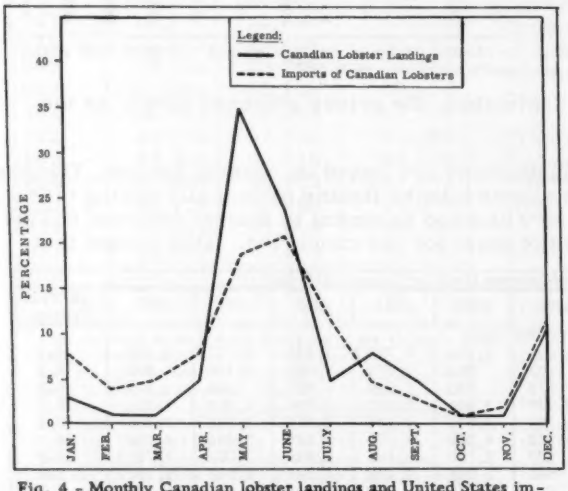

Fig. 4 - Monthly Canadian lobster landings and United States imports of fresh and frozen lobsters, 1948-1957.

Live-lobster storage facilities are in operation along the coast from Kittery to Eastport (table 7). Three methods of live lobster storage are currently in use: (1) tidal pounds for long-term (up to several months) storage (fig. 6); (2) circulating sea-water holding-tanks for preparation of daily shipments to market or for temporary short-term storage (fig. 7); (3) cars and crates anchored near docks, floats, or other installations for auxiliary and short-term storage (fig. 8). Wet-well smacks are also employed for temporary storage of live lobsters at the buying site.

The western Maine coastal area from the Piscataqua River to Cape Elisabeth, with its lack of highly indented coast line and protective islands, relatively low production, and proximity to markets is not suited to the construction and use of tidal pounds. All tidal pounds except one are located between eastern Casco Bay and Jonesport with concentrations being generally located in the Boothbay-Bristol area,

the Friendship-St. George area, Vinalhaven, Stoningotn, Hancock-Sorrento, and the Steuben-Beals area (fig. 9.

Table 5 - Monthly Canadian Lobster Landings 1948-1957 1/

Month	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	10-Year Average
	(1,000 Lbs.)										%
Jan.	1,010	1,090	1,576	1,941	1,087	1,936	1,718	1,642	1,117	885	3.0
Feb.	194	189	340	509	311	367	290	235	577	509	.8
Mar	514	653	256	1,153	780	814	642	356	461	740	1.4
Apr.	2,614	2,418	1,856	2,246	2,629	2,227	2,485	2,766	2,139	1,620	4.9
May	12,966	14,261	18,346	16,881	15,358	16,778	16,177	18,079	17,884	14,841	34.5
June	11,095	10,054	11,424	10,606	11,504	10,329	11,460	10,976	12,685	11,208	23.8
July	2,371	1,949	2,038	1,674	2,757	2,189	2,386	1,922	2,007	1,996	4.6
Aug.	3,197	3,631	4,211	4,149	4,121	3,762	2,769	4,087	5,331	3,484	8.3
Sept.	1,944	2,809	3,039	2,984	2,483	1,878	2,140	2,780	2,581	3,734	5.6
Oct.	234	397	424	205	308	40	295	481	464	380	.7
Nov.	531	466	472	587	732	857	773	807	723	699	1.4
Dec.	4,188	5,293	6,158	6,033	5,582	5,341	4,968	4,828	5,639	3,592	11.0
Total	40,858	43,210	50,140	48,968	47,652	46,518	46,103	48,959	51,608	43,688	100.0

1/Newfoundland 1948 data from Annual Report of the Newfoundland Fisheries Board and General Review of the Fisheries; 1949-1957 data from Annual Report of the Federal Department of Fisheries; 1948-1952 monthly figures are calculated on basis of monthly percentages of period 1953-1957. Nova Scotia, New Brunswick, Prince Edward Island, and Quebec 1948 data from Monthly Report of Eastern Fisheries Division, Halifax, N. S.; 1949-1951 data from Monthly Review of Canadian Fisheries Statistics, Dominion Bureau of Statistics; 1952-1957 data from Annual Report of the Federal Department of Fisheries.

Tidal pounds represent over two-thirds of the Maine live-lobster storage facilities and are the best means to date for holding lobsters for several months without large mortalities. Complete data are not available for the storage capacities in Canada, except for the pounds. There are now fifteen pounds which will hold about 2,325,000 pounds of lobsters. One is located in Yarmouth, Nova Scotia; the other fourteen in Charlotte County, New Brunswick. Nine of these pounds have been built since 1950 and have more than doubled the pre-1950 pound storage capacity.

Circulating sea-water holding tanks for temporary and wholesale-retail trade storage are used extensively in western coastal Maine as far east as western Penobscot Bay. Cars, crates and other floating storage devices are used primarily in conjunction with pounds and follow the same coast distribution pattern as pounds.

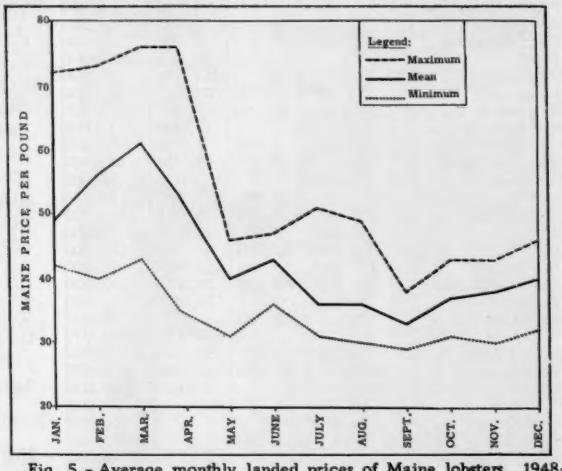

Fig. 5 - Average monthly landed prices of Maine lobsters, 1948-1957.

HISTORY OF TIDAL POUNDS

Lobster pounds have been in existence in Maine for many years. The first pound had been built near Vinalhaven in 1875 (Cobb 1901). This was a successful venture, but other lobster dealers were slow to adopt this method of storage. By 1890, there were three pounds (Counce 1891); in 1895, there were four pounds (Nickerson 1903); and in 1898 there were nine (Cobb op. cit.). These nine were located at Dyer Bay, Sunset on Deer Isle, Vinalhaven, Long Island, South Bristol, Pemaquid Beach, Southport, and House Island in Portland Harbor. By 1902, the number had increased to 23, and in 1903 there were 26 (Nickerson 1905) with a total estimated holding capacity of 1.5 million pounds of lobster.

The great increase in the number of lobster pounds after 1895 was largely the result of the decline in the Maine lobster-canning industry and the increase in the shipping of live lobsters. Cobb (op. cit.) stated that when the Maine supply of lobsters began to decrease shortly before 1870, many attributed this decline to the canneries. Laws restricting the activities of the canneries were enacted between 1879 and 1895, and as a result the canneries that formerly could process any size of lobster during the entire year were finally restricted by 1895 to canning lobsters of $10\frac{1}{2}$ inches total length during a few weeks in the spring only. According to the Commissioner of Sea and Shore Fisheries, this brought about the death of the canning industry. In the 1880's the lobster-canning industry began moving to the Canadian provinces and by 1895 there was only one Maine lobster cannery, which closed shortly after the 1895 law became effective. Nickerson (1903) reported that prior to 1895 no live lobsters were shipped west of New York State, but a few years later live lobsters were being carried "all over the country" in refrigerator railroad cars. As great numbers were sold to the live lobster market instead of canneries, there was a need for increased facilities for holding the catch, and pounds provided an excellent means of storage.

Table 6 - Average Monthly Landed Value (Cents) of Maine Lobsters, 1948-1957

Month	Year										10-Year Average		
	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	Mean	Maximum	Minimum
	(Cents Per Lb.)												
Jan.	42.6	42.7	45.1	41.6	51.0	51.7	44.3	51.3	72.0	47.9	49.0	72.0	41.6
Feb.	44.6	53.3	55.2	40.3	57.9	50.7	56.1	69.1	73.0	60.7	56.1	73.0	40.3
Mar.	52.4	60.8	54.6	42.8	63.3	60.2	61.7	72.8	76.3	60.7	60.6	76.3	42.8
Apr.	45.9	45.8	54.4	35.1	52.2	56.2	62.5	60.7	76.3	46.7	53.6	76.3	35.1
May	36.2	37.6	38.1	31.3	40.6	45.3	42.5	43.5	46.0	43.3	40.4	46.0	31.3
June	39.0	42.9	39.6	35.6	46.2	41.4	42.8	44.1	45.9	46.0	42.4	46.2	35.6
July	35.3	34.8	32.9	31.3	38.6	35.5	36.2	37.8	50.8	36.6	37.0	50.8	31.3
Aug.	39.3	33.2	29.5	32.6	43.6	31.9	32.5	34.3	49.4	33.9	36.0	49.4	29.5
Sept.	37.8	30.5	28.5	29.9	35.5	34.4	30.8	30.9	38.0	33.6	33.0	38.0	28.5
Oct.	43.0	31.4	33.3	40.2	38.5	37.1	37.9	34.6	36.1	30.9	36.3	43.0	30.9
Nov.	42.7	29.8	36.3	38.0	43.3	37.9	37.4	36.3	36.6	30.8	36.9	43.3	29.8
Dec.	40.0	31.6	40.5	37.1	44.9	37.3	40.6	46.3	41.5	44.7	40.5	46.3	31.6

Table 7 - Capacity (Weight in Pounds) of Maine Lobster Storage Facilities

Place	Pounds	Cars	Tanks	Total
Kittery	-	-	35,000	35,000
York	-	-	25,000	25,000
Wells	-	-	6,000	6,000
Kennebunkport	-	7,000	30,000	37,000
Biddeford	-	-	14,500	14,500
Saco	-	-	4,000	4,000
Scarboro	-	-	13,000	13,000
Cape Elizabeth	-	-	12,000	12,000
South Portland	-	-	29,000	29,000
Portland	-	-	135,600	135,600
Harpswell	91,000	63,000	22,000	176,000
Phippsburg	75,000	33,500	23,000	131,500
Georgetown	-	-	11,000	11,000
Southport	250,000	800	2,000	252,800
Boothbay Harbor	40,000	29,400	45,000	114,400
Boothbay	70,000	-	9,000	79,000
Bristol	-	28,000	2,450	30,450
South Bristol	285,000	12,500	4,200	301,700
Bren	60,000	5,000	10,000	75,000
Friendship	465,000	17,000	-	482,000
St. George	285,000	58,000	155,000	498,000
South Thomaston	50,000	26,000	29,000	105,000
Rockland	-	-	54,000	54,000
Matinicus	-	15,000	-	15,000
Rockport	-	-	100,000	100,000
Muscle Ridge Pl.	55,000	10,000	30,000	95,000
Vinalhaven	235,000	45,000	31,500	311,500
Belfast	-	-	10,000	10,000
Deer Isle	50,000	22,000	-	72,000
Stonington	200,000	104,000	-	304,000
Swans Island	-	23,000	-	23,000
Brooklin	-	3,000	-	3,000
Tremont	-	42,000	-	42,000
Southwest Harbor	-	43,000	-	43,000
Cranberry Isles	-	34,000	-	34,000
Long Id. Pl.	-	14,000	-	14,000
Hancock	710,000	6,000	-	716,000
Sorrento	100,000	-	-	100,000
Winter Harbor	-	85,000	-	85,000
Gouldsboro	135,000	17,000	-	152,000
Steuben	304,000	37,500	-	341,500
Millbridge	150,000	24,000	-	174,000
Addison	140,000	15,000	-	155,000
Jonesport	120,000	100,000	-	220,000
Beals	340,000	15,000	-	355,000
Cutler	-	33,600	-	33,600
Eastport	80,000		4,000	84,000
Total	4,290,000	968,300	846,250	6,104,550

During the first decade following the enactment of the larger minimum size (1895-1904), 23 pounds were built in Maine coastal waters, the largest number ever constructed in so short a period (tables 8 and 9). Aside from the impetus provided by legislation unfavorable to lobster canning, there is not much evidence to indicate what other influences were necessary to encourage the construction of tidal pounds. The magnitude of the summer-fall catch does not appear to be a controlling criterion. During the de-

pression of the 1930s, lobster production remained at or near a record minimum, averaging approximately six and one-half million pounds a year, yet in the eight-year period 1933-1940, thirteen new pounds were constructed, the second most rapid rate of pound construction in the history of the industry. By contrast, in the seventeen-year period, 1941-1958, when landings had increased nearly 300 percent above the depression level, only eleven pounds were built. The doubling of Canadian pound capacity during the 1950s would reduce somewhat the need for more Maine lobster pounds in recent years.

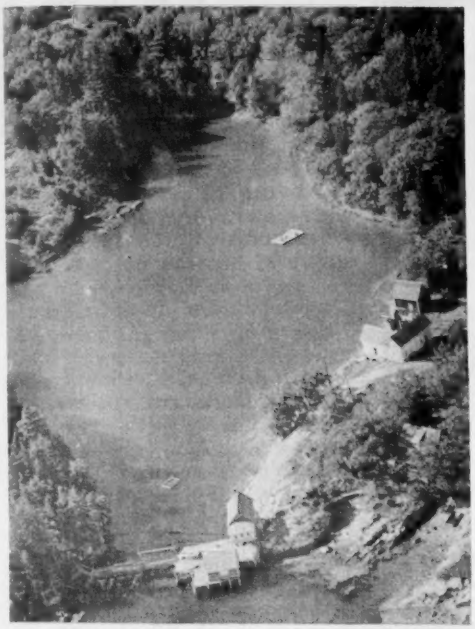

Fig. 6 - Lobster pound at Pig Cove, Southport, Me., capacity 100,000 pounds, built in 1888.

DESCRIPTION OF POUND OPERATION

The term "lobster pound" has two distinct usages. Certain retail outlets, particularly those equipped with tanks, advertise themselves as lobster pounds. The industry itself, however, defines a lobster pound as an enclosed area, flushed by tide water, in which lobsters may be stored. The most common method of building a pound is to place a dam across the mouth of a small cove (figure 6). Some pounds have two dams connecting an island with the mainland, and a few have a dam from the shore forming three sides of the pound. The top of the dam is usually several feet below high water level, and the water flushing over the dam provides the needed circulation.

Fig. 7 - Weighing and packing lobsters for shipment. Indoor tank system in operation.

To remove lobsters from the pound, seines or modified beam trawls are dragged along the bottom. Most pounds are designed to permit complete drainage on low spring tides when the last of the lobsters may be collected.

The use of lobster pounds is based upon seasonal variations in abundance and price of lobsters, and upon the difficulties of handling new-shell lobsters in the summer. A pound will be filled with hard-shell lobsters when lobsters first become active in the spring and when Canadian imports are at their peak. Care must then be taken that the lobsters are taken out before the summer moulting time, for most captive lobsters that shed their shells

Table 8 - Maine Lobster Pounds, Year Built and Location

Year Built	Location	County	Name of Pound	Capacity in Pounds	Operating in 1958
1875	Vinalhaven	Knox	Johnson and Young	300,000	No
1888	Southport, Ebenecook Harbor	Lincoln	Atwood	150,000	Yes
1888	Southport, Pig Cove	Lincoln	Robinson	100,000	Yes
1895[1]	-	-	-	-	-
1898	Steuben, Dyer Bay	Washington	-	-	No
1898	Deer Isle, Sunset	Hancock	-	-	No
1898	South Bristol, High Id.	Lincoln	High Island	50,000	No
1898	Bristol, Pemaquid Beach	Lincoln	-	-	No
1898	Portland, House Island	Cumberland	-	-	No
1898	Friendship, Long Island	Knox	Sim's	350,000	Yes
1899	Friendship, Forest Lake	Knox	Lowry	50,000	Yes
1899	South Bristol	Lincoln	-	-	No
1900	Bristol, Back Cove	Lincoln	Trefethen	75,000	No
1900	Unknown	Cumberland	-	-	No
1900[3]	Steuben, Dyer Bay	Washington	Wyman	54,000	Yes
1900[4]	Steuben, Dyer Bay	Washington	N. I. Beal	20,000	No
1901	Unknown	Lincoln	-	-	No
1902	Unknown	Hancock	-	-	No
1902[5]	Milbridge, Smith Cove	Washington	Stewart	150,000	Yes
1902	Unknown	Washington	-	-	No
1902	Unknown	Washington	-	-	No
1902	Unknown	Washington	-	-	No
1903	Unknown	Washington	-	-	No
1903	Unknown	Washington	-	-	No
1903	Unknown	Hancock	-	-	No
1904	Hancock, Skillings River	Hancock	Consolidated #1	450,000	Yes
1904	Muscle Ridges, Hewell Id.	Knox	Hewell Island	55,000	Yes
1905[6]	Friendship, Little Morse Id.	Knox	Post	65,000	Yes
1906[7]	Boothbay Harbor, East Side	Lincoln	Higgins	40,000	Yes
1909	Bristol, Johns Bay	Lincoln	Riverview	50,000	No
1913[8]	Beals, Robert Ray Cove	Washington	Robert Ray Cove	40,000	Yes
1914	Hancock, Skillings River	Hancock	Consolidated #2	90,000	Yes
1914[9]	Hancock, Skillings River	Hancock	Consolidated #3	90,000	Yes
1918[9]	Gouldsboro, Bunkers Harbor	Hancock	American Lobster Co. #1	40,000	Yes
1918[9]	Gouldsboro, Bunkers Harbor	Hancock	American Lobster Co. #2	50,000	Yes
1918	Vinalhaven, Green Island	Knox	Green Island	80,000	Yes
1921	Harpswell, Cundy's Harbor	Cumberland	Watson #2	14,000	Yes
1923	Winter Harbor, Schoodic Point	Hancock	Schoodic Point	70,000	No
1924	Hancock, Skillings River	Hancock	Consolidated #4	30,000	Yes
1924	Steuben, Dyer Bay	Washington	Mitchell	100,000	Yes
1926[2]	Jonesport, W. Jonesport	Washington	Kirby and Look	100,000	Yes
1926	Harpswell, Cundy's Harbor	Cumberland	Watson #1	65,000	Yes
1933	Bremen, Keene Neck	Lincoln	Zahn	60,000	Yes
1936	Addison, S. Addison	Washington	Look	140,000	Yes
1936	Eastport, Harris Cove	Washington	Emery and Frankland	80,000	Yes
1936	Deer Isle, Sunshine	Hancock	Heanssler	50,000	Yes
1936	Stonington, Causeway	Hancock	Barter	100,000	No
1938	Stonington, Moose Id.	Hancock	Colwell	50,000	Yes
1938	Corea	Hancock	Corea Seafoods	45,000	Yes
1938[10]	Beals, Great Wass Id.	Washington	Deep Cove	300,000	Yes
1938[8]	St. George, Long Cove	Knox	Wild Cat	120,000	Yes
1939[8]	St. George, Marshall Point	Knox	Marshall Point	40,000	Yes
1940	Stonington, Green Head	Hancock	Cortesi	150,000	Yes
1940[6]	Sorrento, Oak Point	Hancock	Creamer	100,000	Yes
1940	Jonesport	Washington	Look	20,000	Yes
1943	St. George, Port Clyde	Knox	Horse Point	125,000	Yes
1943	Vinalhaven, Norton's Point	Knox	Norton's Point	45,000	Yes
1945	Vinalhaven, Indian Creek	Knox	Indian Creek #1	65,000	Yes
1946[11]	South Bristol, Christmas Cove	Lincoln	Hook	205,000	Yes
1947	Boothbay, Farnum's Cove	Lincoln	Eagle	70,000	Yes
1947[10]	South Thomaston, Spruce Head	Knox	Spruce Head	30,000	Yes
1949	Vinalhaven, Indian Creek	Knox	Indian Creek #2	45,000	Yes
1949	Phippsburg, Hermit Id.	Sagadahoc	Hermit Island	75,000	Yes
1951[12]	Cushing, Pleasant Point	Knox	Associated	16,500	No
1953	Hancock, Tidal Falls	Hancock	Tidal Falls	50,000	Yes
1955	Harpswell, Yarmouth Id.	Cumberland	Yarmouth Island	12,000	Yes
1957	Steuben, Goose Cove	Washington	Francis	150,000	Yes

1/One of the six pounds listed as built in 1898 was actually built in 1895.
2/Rebuilt in 1958.
3/Rebuilt in 1943.
4/Rebuilt in 1941, after being unused since 1920. Being reconditioned in 1958.
5/Rebuilt in 1945.
6/Rebuilt in 1957.
7/Rebuilt in 1939.
8/Rebuilt in 1952.
9/Rebuilt in 1938, two pounds.
10/Rebuilt in 1955.
11/Rebuilt in 1951.
12/Never completed.

are eaten by their companions. Pounding delays the moult by several weeks by which time they command a premium over the newly-shed lobsters that are being caught. After the hard-shelled lobsters have been removed, the softer, newly-moulted lobsters from the landings are released in the pound. These lobsters harden as the summer progresses, and withstand the rigors of shipment better. During the summer, a pound may be almost continuously stocked and emptied, depending upon sales, landings, and condition of the lobsters.

Fig. 8 - Weighing lobster crate on a lobster car.

In anticipation of the high prices prevailing in mid-winter when landings fall to a very low point, lobster pounds are stocked to capacity in late summer or early fall when the combination of peak landings and dwindling markets result in the lowest prices of the year. Occasionally a lapse in production results in a short period of high prices in late fall, at which time some pounds may be emptied to be refilled when the price drops again. Generally such a sharp fluctuation is caused by a stormy period which prevents fishing.

The pound capacities as shown in table 7 represent the total poundage that could be held at any one time. In actual practice, many pounds during the year handle more than their capacity because of seasonal filling and emptying. Data were obtained from ten pounds that have been in operation during recent years. Fall and spring were the important storage seasons. These pounds, whose total capacity was 980,000

Table 9 - Maine Lobster Pound Chronology, by Decades

Decade	Number Built	Number in Operation in 1958	Capacity of Those Built	Average Annual Lobsters Landings 1/
			Lbs.	Millions of Lbs.
1870-1879	1	-	300,000	Unknown
1880-1889	2	2	250,000	21.1 (5)
1890-1899	8	2	2/ 400,000	12.1 (3)
1900-1909	18	6	3/ 421,000	14.6 (10)
1910-1919	6	6	470,000	13.1 (3)
1920-1929	6	5	729,000	6.4 (3)
1930-1939	10	9	985,000	6.5 (10)
1940-1949	11	11	4/ 1,010,000	14.1 (10)
1950-1958	4	3	228,500	21.4 (8)
Total	66	44		

1/Numbers in parentheses in the last column refer to number of years when censuses were made.
2/Four pounds not included.
3/Ten pounds not included.
4/One pound of 16,500 number capacity not completed.

pounds, held an average of about 1,365,000 pounds during the years when they were filled and an average of about 1,190,000 pounds for all the periods. Using the latter average and applying it to the capacities shown in table 7, we find that an average of about 5,165,000 pounds would be stored, of which 3,120,000 pounds would be during the fall, 1,960,000 pounds in the spring, and 85,000 pounds during the summer.

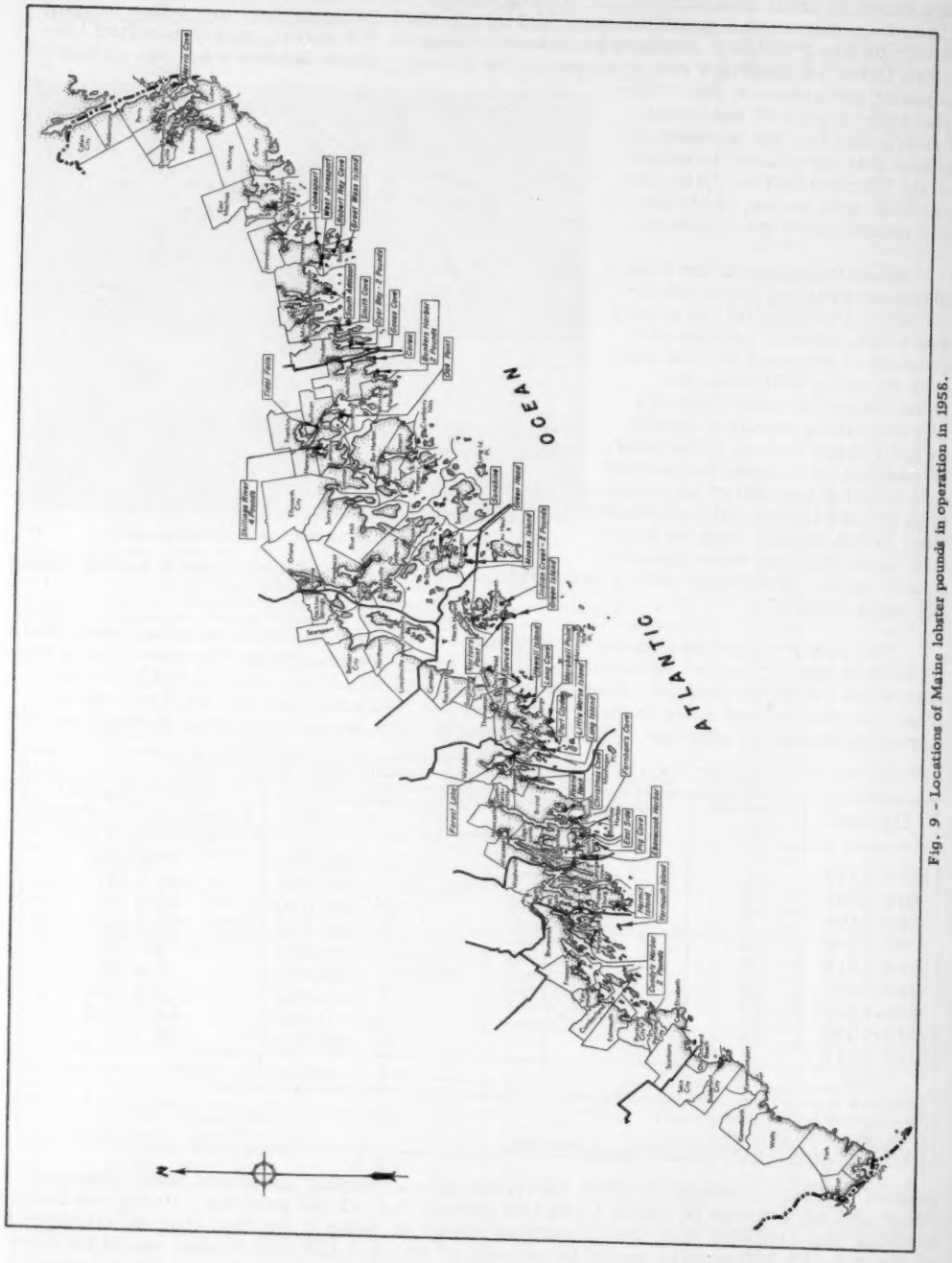

Fig. 9 - Locations of Maine lobster pounds in operation in 1958.

In addition to an apparent rise in lobster abundance after 1943 (Taylor, Bigelow, and Graham 1957), it has been shown that economic factors were important in determining the size of the annual Maine landings during the economically-depressed period 1919-1940 and the more highly profitable 1940s and marginally-profitable 1950s (Dow and Trott, 1956). However, the lobster fishery is a seasonal fishery, for seventy percent or more of the annual catch is made in the first four months of the July-June lobster year, and a portion of the fishing season (July-August) coincides with a high demand summer tourist trade. During the two-month period of this coincidence, average landed value (prices paid to the fishermen is in inverse relation to the size of landings (table 10 and figure 10) on an annual basis for the last forty years (Dow and Trott, op. cit.). The need for and the attractiveness of pound-storing Maine-caught lobsters for winter-marketing varies within the range of this inverse seasonal relation.

Table 10 - July and August Maine Lobster Landings and Average Prices, 1952-1958

Year	Landings	Average Price
	Pounds	Cents
1952	7,112,505	41.9
1953	8,128,386	33.3
1954	8,134,331	33.8
1955	8,347,329	32.2
1956	5,081,701	49.7
1957	7,769,962	34.9
1958	5,955,785	50.2

Sea-water temperature appears to be an important factor in the catch during the July-August period. Table 11 and figure 11 show that there is a close relation between the January-July Boothbay Harbor, Maine water temperature and the size of the July-August catch. Presumably, the contraction or expansion of the moulting period is affected by the average temperatures prevailing in the months preceding the moulting time. Summer production in some years has been economically favorable for pound storage, but in other years, the delayed catches associated with low water temperatures has made summer pound storage speculatively less favorable. When summer market demand has been met, landed prices decline and a supply of surplus lobsters becomes available for storage. During summers of low water temperatures (1956 and 1958), landings may fail to meet summer demand and, consequently, prices remain relatively high. When these conditions occur, pound storage does not become economically feasible until the end of the tourist season brings a decline in demand. The price-production relation during the summers of 1956 and 1958 suggest that between those two years summer demand increased approximately twenty percent. This assumption is supported by a million-pound increase in landings during July and August with no decline (actually an increase from 49.7 to 50.2 cents) in price.

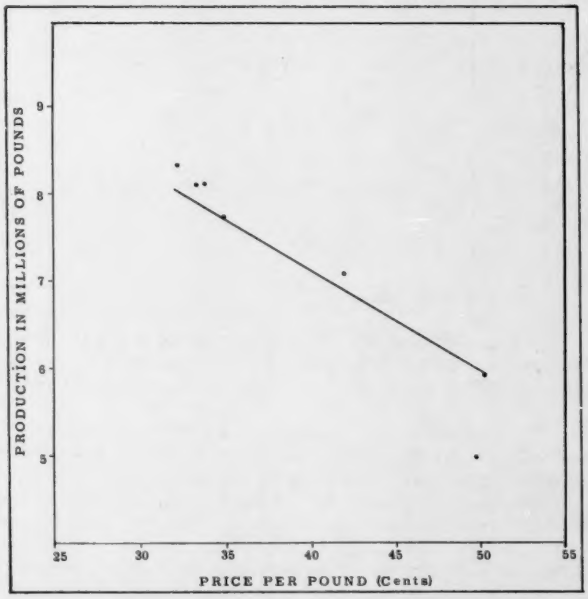

Fig. 10 - Relationship between July-August Maine lobster landings and price per pound, 1952-1958.

PROBLEMS TO BE SOLVED

There are a number of factors affecting the survival of lobsters held in pounds. Each of these factors has an optimum (most desirable) value or range of values for the survival of lobsters. Generally any deviation from the optimum results in an increase in mortality. Deviations of two or more factors from their optima appear to be synergistic, that is, the total mortality is greater than would be predicted from the deviation of the factors taken separately.

Many of these factors are recognized. Prevailing water temperatures, salinity fluctuations, degree of mixing of impounded water with outside water, volume of enclosed water, area of bottom, and infection with disease all interact to produce such drastic variations in maximum storage capacity that even the most conservative pound operators have occasional trouble. Although these factors are recognized, their effects cannot be predicted with precision, and even their optimum values are in doubt. Much more work needs to be done to determine the precise interrelationships among these factors.

Table 11 - July-August Maine Lobster Landings and January-July Mean Boothbay Harbor, Maine, Surface Sea-Water Temperatures, 1944-1958

Year	Maine Lobster Landings July-August (Millions of Pounds)	Mean Boothbay Harbor Surface Water Temperatures, January-July (Degrees Fahrenheit)
1944	3.6	43.2
1945	4.5	44.3
1946	4.1	43.6
1947	5.0	44.8
1948	3.6	43.4
1949	5.3	1/ 46.5
1950	5.5	46.3
1951	7.2	48.5
1952	7.1	47.5
1953	8.1	49.2
1954	8.1	47.3
1955	8.3	47.7
1956	5.1	44.7
1957	7.8	46.2
1958	6.0	44.9

1/ July temperature was estimated.

Water temperatures appear to be a limiting factor in the Casco Bay area in Maine, and establish the western limit of lobster pounding. Here water temperatures rise to 65° F. or higher, and the commercial storage of lobsters becomes difficult.

Except as it affects the lobsters' tolerance to high water temperatures and dissolved oxygen depletion, salinity does not seem to be a major problem in most pounds. The volume of fresh water required to reduce the salinity of the lobster pound to the danger point is more than is usually available. Occasionally, however, enough fresh water will flow over the top of a pound, sweeping away the higher layers of sea water, so that there is insufficient oxygen in the residual layer of sea water to support the lobsters. In this case, mortality is directly due to smothering.

Particularly during low tide, heavily stocked pounds may have marked oxygen depletion at the bottom stratum, even when the upper strata are progressively richer in oxygen. Compressed air has been used to break up such stratification and produce homogeneous oxygen distribution within pounds. Such treatment of fresh ponds has been described by Schmitz and Hasler (1958).

Pounded lobsters are usually fed, although they may go for several months without feeding. Unfed, they lose weight, and cannibalism becomes more troublesome. Redfish (Sebastes) racks (the skeletons left after the fish are filleted) and herring are the most popular foods. Trash fish may also be used. The amount of food given can be quite critical. If more is provided than the lobsters can eat, the resulting putrefaction consumes oxygen and may release toxic products. Food requirements vary with season and condition of lobsters; therefore, most poundkeepers provide just enough food so that none is left after twenty-four hours.

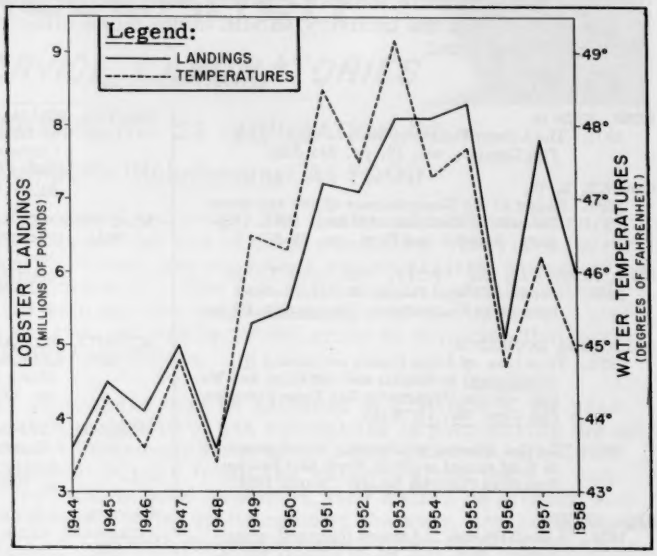

Fig. 11 - Maine July-August lobster landings and mean Boothbay Harbor surface water temperatures January-July.

The known diseases of lobsters are fortunately few and not particularly widespread, but at times they can be quite costly. Gaffkya homarii, the worst killer of stored lobsters, is a bacterium which multiplies in the blood stream of the lobster and destroys the blood corpuscles (Snieszko and Taylor, 1947). This disease is commonly known as "red tail," however, the reddish discoloration sometimes found under the tail is not, as first believed, a symptom of Gaffkya infection, so the common name is misleading. Shell disease, caused by shell-consuming bacteria which attack the cuticle of the shell or gills, may cause moderate mortality (Hess 1937, Sawyer and Taylor, 1949). The greater economic damage is done, however, by the unsightly lesions left on the shells of surviving lobsters. Most lobsters are sold alive or, in the shell, so shell disease has an adverse effect on their marketability. There are without doubt other diseases which we do not yet recognize. We know that severe winter mortalities can occur when neither red tail nor shell disease may be detected. At present their causes must remain subject for speculation.

There are several other conditions which do not occur in lobster pounds, but are lethal to lobsters stored in tank systems. One is gas disease, caused by the compression of air with pumped sea water (Harriman, 1955). This results in a supersaturation of dissolved nitrogen which is injurious to lobsters. Some mortalities result from the presence of toxic ions (Wilder 1952, Harriman 1953), such as copper, or certain insecticides, notably the gamma isomer of benzene hexachloride (Lindane).

The final aspect of lobster pound operation which is worthy of much more work is the role of pounds in conditioning of lobsters. Through most of the summer, large numbers of "shedder" (recently-moulted) lobsters are landed. Such lobsters have thin shells, poor meat, and do not ship well. Many pound operators put such lobsters into the pound until the shell becomes harder. A study of pound practices to promote methods of hardening shell and building meat content simultaneously is needed.

There is an extensive amount of information on the physical and biological limitations of pound operation. In the major lobster-producing areas, Federal and State biologists are available to discuss handling problems and in some cases may be able to diagnose the causes of mortalities. However, a considerable amount of information is either spotty or nonexistent. If biological research is to bring the greatest possible benefit to the lobster industry, a more intensive program of research must be supported, and the industry should make more effective use of the personnel and information at hand.

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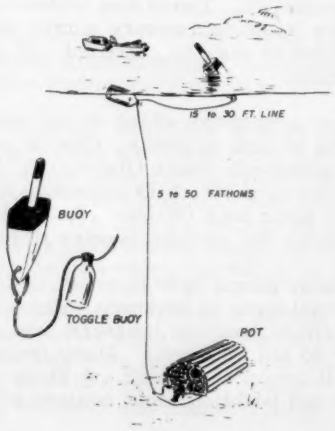


TECHNICAL NOTE NO. 53 - UTILIZATION OF SEA CUCUMBERS (Holothurians) AS FOOD

Sea cucumbers (sometimes called sea slugs) are fleshy echinoderms occurring commonly on the bottom both of intertidal and of deep-sea areas. They are related to starfish. The leathery skin, however, has no spines and no skeletal structure beyond small plates of calcareous material. The sea cucumber is a simple animal, tube-like in form, in which the skin and the longitudinal muscle surround the viscera. The front or anterior end is determined easily by the group of tentacles that serve to sweep water and food from the sea bottom.

In the North Pacific, sea cucumbers may be gathered at any time of the year, but natives in Alaska claim that the quality of sea cucumbers is poor during the summer or period of warmer water. Sea cucumbers, after being gathered, should be placed in a tub with a small amount of pure fresh sea water to allow them to contract. While they are still fresh and in good condition, they should be cleaned and eviscerated by cutting off one or both ends, splitting down the side, and scraping and flushing out the visceral matter. The skin and the attached inner muscle, which is usually white, can be handled in either of two ways:

1. Most people prefer to use only the white longitudinal muscle, which looks and tastes like excellent-quality sliced clam meats, once it is separated from the outer skin. The skin with attached muscle should be washed in fresh sea water, and the white muscle should be peeled or cut away from the skin as thin strips. The muscle then can be used fresh, frozen, or canned.

Fresh: Cook the thin white strips of muscle and use them in the same way as raw clam meats are used. The muscle, if simmered in a small amount of salted water for a few minutes, for example, can be minced easily and used to make chowder, fritters, and sea-cucumber dip, employing the same ingredients as those of clam dip--namely, fresh cream, cream cheese, and seasoning.

Frozen: Pack the muscle in small jars or cans, flood it with a 2-percent salt solution (about 1 tablespoon of salt per quart of water), close or seam it, freeze, and store at 0° F. The meats will keep for 3 or 4 months in good condition.

Canned: Use a process similar to that employed with minced razor clams. Fill the minced sea cucumber in brine into $\frac{1}{2}$-pound cans (307 x 113) with c-enamel, vacuum-seam; process for 35 minutes at 240° F. (10 pounds steam pressure), and water cool. No data are available on the yield of meat per weight of whole animal, but it is known to be low.

2. The Indians of the Northwest Coast prepare the entire skin and attached muscle for use by boiling the eviscerated sea cucumber for about 20 minutes or by roasting it in a fire pit. The sea cucumber also can be dried and used in the same way as is trepang or dried sea cucumber of the Orient.

A discussion of the preparation of trepang is given in Research Report 18 of the Fish and Wildlife Service, U. S. Department of the Interior, Curing of Fishery Products, by Norman D. Jarvis. Copies of this bulletin may be bought from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 75 cents each.

--By John A. Dassow, Supervisory Chemist,
Fishery Technological Laboratory,
Division of Industrial Research and Services,
U. S. Bureau of Commercial Fisheries
Seattle, Wash.

FIFTEEN MONTHS FROZEN STORAGE POSSIBLE FOR PINK SHRIMP

The frozen storage life of pink shrimp is between 9 and 15 months, depending on packaging materials and storage environment. This finding was the result of tests completed early this year at the U. S. Bureau of Commercial Fisheries Technological Laboratory in East Boston, Mass. It was found that (1) peeled and deveined and (2) headless pink shrimp in the shell, frozen individually and in block form, packed in commercial packages, and stored in a commercial-type cold-storage room at 0° to -5° F. became unmarketable in 9 months due to excessive dehydration. Storage of similar samples at the same temperature in a high-humidity jacketed cold-storage room extended the storage life by at least 3 months. The quality of the control-sample of shrimp which was vacuum-packed with water in hermetically-sealed cans and stored at -25° F. was still good to very good after 15 months of frozen storage.

INVESTIGATIONS IN FREEZING GULF OYSTERS

The problems involved in the freezing and storage of oysters have been investigated by Drs. E. A. Feiger, A. F. Novak, and M. E. Bailey at Louisiana State University. This research was conducted under a contract financed by the U. S. Bureau of Commercial Fisheries with funds provided by the Saltonstall-Kennedy Act of 1954. The contract was terminated in 1958. Numerous investigations were made in which various methods of pretreatment, packaging, and freezing techniques were studied in efforts to develop a procedure which would result in a satisfactory frozen product.

The most important requirement is that the oysters used for freezing be of prime quality, that is, have a high content of glycogen, fat, and total solids. It is also very important to maintain a good glaze on the frozen oysters throughout the storage period. Individually-frozen oysters or exposed surfaces of bulk-frozen oysters developed yellow colors and when these oysters were cooked the yellow color turned to orange and the oysters were found to have a strong, rancid flavor and odor.

In addition to the yellow discoloration as a result of frozen storage, the mantle fringe of the oysters turned black and the mantle tissues became transparent so that the viscera mass showed through as a black or greenish black spot. These changes occurred even though the oysters were well glazed and stored at 0° F. Some oysters also showed a pink discoloration near the adductor muscle.

The longer storage periods were also observed to result in increased fragility of the thawed oysters, and shrinkage and loss in weight during cooking also appeared to increase with increased frozen storage.

None of the treatments used on the raw oyster prior to freezing were successful in preventing all these adverse changes due to frozen storage. The use of a solution of sodium phosphate with a pH of 6.5 to 7.0 to wash the oysters prior to freezing reduced the amount of drip and the incidence of dark discoloration. Vacuum-packing in a sealed can was the best method of packaging tried.

HALIBUT IS PLENTIFUL

Halibut is now plentiful because this is the beginning of the halibut season in the cold waters of the North Pacific Ocean, off the coasts of Washington, British Columbia, and Alaska, reports the Fish and Wildlife Service of the Department of the Interior. The main fishing season lasts from 8 to 10 weeks.

The halibut, taken commercially, range in size from 5 to more than 80 pounds, with a few as large as 400 pounds being landed. The 5- to 10-pound sizes are referred to as "chicken halibut;" those from 10- to 60-pounds, "mediums;" those from 60- to 80-pounds, "large;" and those over 80 pounds, as "whale" halibut.

Halibut is a firm and flavorful fish having white, translucent meat. It may be prepared very successfully by any of the basic cooking methods such as frying, baking, broiling, and steaming.

Even though most of the halibut comes from the Pacific Northwest, halibut is available in all parts of the United States, mainly as frozen steaks. Chunks and fillets of halibut are other forms in which it may be purchased. Frozen steaks or fillets may be cooked without thawing if additional cooking time is allowed.

The home economists of the United States Fish and Wildlife Service suggest that you take advantage of the abundance of halibut steaks and fillets on the market and serve "Curried Halibut Casserole" to your family this spring.

CURRIED HALIBUT CASSEROLE

2 CUPS FLAKED HALIBUT	½ CUP MILK
1 PACKAGE (8 OUNCES) NOODLES	1 CAN (10½ OUNCES) CREAM OF MUSHROOM SOUP
1½ TEASPOONS CURRY POWDER	1 CAN (1 POUND 4 OUNCES) ASPARAGUS, DRAINED
2 TABLESPOONS BUTTER OR OTHER FAT, MELTED	1 CUP GRATED CHEESE

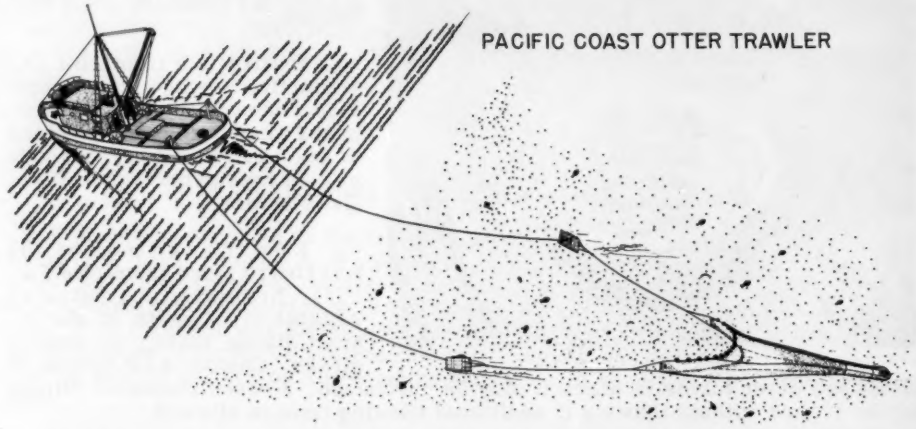
Cook noodles as directed on package; drain. Place in a well-greased 2½-quart casserole. Cover with fish. Combine curry powder, butter, milk, and soup. Pour over fish and noodles. Arrange asparagus over casserole and sprinkle with cheese. Bake in a moderate oven, 350° F., for 25 to 30 minutes or until brown. Serves 6.

TRENDS AND DEVELOPMENTS

California

DEEP-WATER TRAWLING FLEET: Every day, weather permitting, a fleet of about 50 vessels sails from the various harbors between Eureka and Santa Barbara, Calif., to tow their nets along the bottom of the Pacific Ocean. Modern navigation and depth-sounding equipment, combined with bigger and better winches, have made it possible for these fishermen to extend their operations farther offshore. Today it is not uncommon for them to fish in depths exceeding 2,000 feet.

Over 20 different kinds of fish are caught in commercial quantities along the California coast. The total catch of this fleet has averaged well over 30 million pounds for the past several years and represents an income to the vessels of nearly $2 million.



PACIFIC COAST OTTER TRAWLER

The trawl fleet, equipped with very specialized fishing gear, seeks fish living on or very near the bottom. In several hundred years no other type of fishing equipment has been developed to harvest sole and flounder adequately from the ocean floor. These nets derive their name, "otter trawl," from the large otter boards or kites used to spread the mouth of the net open as it is pulled through the water.

A trawl net collects everything in its path, so is often blamed for the destruction of feeding grounds, fish eggs, and young fish.

The food-producing part of the sea is the surface layer of water and the shallow areas close to shore where sunlight may penetrate, rather than offshore depths where trawling occurs. California law prohibits all trawling within three nautical miles of the coastline. This usually limits the trawl fishermen to depths greater than 100 feet and removes them from the areas of greatest food production.

Few, if any, of our ocean fishes attach their eggs to the bottom in the depths at which commercial trawlers fish. Fish inhabiting deeper water have pelagic or free-floating eggs. These eggs drift at the mercy of winds and currents and are unaffected by trawl nets. Climatic changes have far greater effect on the survival of the eggs than any action of the nets.

Perhaps the greatest criticism of otter trawls is their destruction of small fish. This charge was real. Extensive tests carried out in fishing countries all over the world, California included, have shown that small fish are caught in small mesh nets, and larger mesh nets allow small fish to escape.

In addition, larger mesh nets capture large fish in less time because a greater towing speed is possible with the lessened water resistance. Thus, fishermen benefit from a better grade of fish, less labor in sorting of the catch, and more assurance of a supply of fish for the future.

Biologists from California, Oregon, and Washington have measured thousands of fish of several species, caught with nets of various size meshes, to have a sound basis for setting up uniform mesh regulations for the Pacific Coast. Today a coast-wide minimum mesh size of $4\frac{1}{2}$ inches (measured between the knots) is in effect. By stating what the minimum opening in the net must be, variations brought about by use of lighter or heavier twines is eliminated. A $4\frac{1}{2}$-inch opening gives the best balance between marketable fish and escapement.

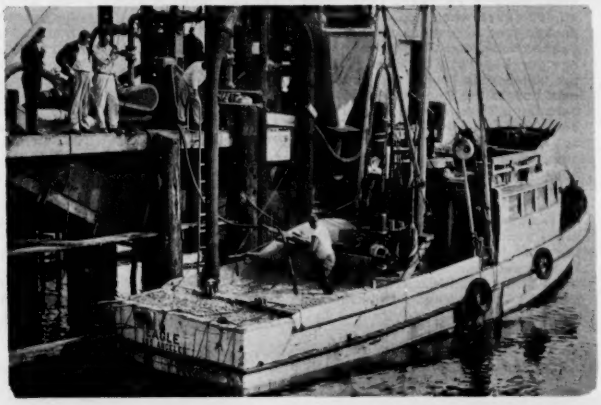
Recent developments of underwater motion picture taking and television techniques are adding much to the store of knowledge about action of nets when fishing. What these developments reveal can have great bearing on future regulations. (Outdoor California, January 1959.)

* * * * *

SEASONAL FISHERY FOR SQUID: The California squid fishery is seasonal and is in full swing during the winter months. Between November 1957-March 1958 about 3.5 million pounds of squid were landed in California.

Most of the catch is canned--most of it in its own ink for export to the Philippines and Greece. For the Latin-American trade squid may be canned in hot sauce.

The squid fishery in California is a fall-to-spring business, for it is then that they congregate in dense schools to breed and spawn. During these months fishermen usually are willing to accept $25 to $40 a ton because more lucrative species are absent.



Unloading squid at a California Terminal Island cannery. Note lights used to attract squid and the fishing racks hanging over the stern from which the squid are hand brailed.

Most of the California squid catch is taken in Central California waters by special, small, round haul nets and goes to the markets and canneries of Monterey and San Francisco. However, the Southern California fishery is unique, generally involving smaller boats which brail the squid from the waters in much the same manner as mackerel are scooped, but without chumming.

Fishing in Southern California waters is done at night with a 1,500-watt lamp hung from the mast or boom of a drifting boat to attract the squid to the surface. In the crystal-clear waters of the Channel Islands, where most squid are captured, large concentrations of squid make it seem as though the whole sea bottom is arising from the depths and that the fishing boat will soon be aground, high and dry.

As soon as the school has surfaced, the night light is lowered to 5 or 6 feet above the water and brailing begins. The brailing is accomplished by hand, or by power if the boat is equipped with a power-driven cathead. Hand brailing is done by one or two men from fishing racks hanging over the stern. They may capture from 2 to 10 tons a night.

Boats using power brails usually are manned by three or more fishermen who operate the scoop from the deck. The brail end of the scoop is 3 or 4 feet in diameter and may be oval or round with a bag as long as 18 feet. As much as three tons may be taken with 3 or 4 passes of the scoop and as much as 30 tons may be put aboard during a single night.

Besides the use of squid for food, a large amount is used for live and frozen bait.

When squid are available, bait haulers and party boat operators frequently fish them for live bait on the sport fishing boats. Sometimes they are sought to supplement scarce anchovies and sometimes just because they are preferred over other kinds of live bait. (Outdoor California, January 1959, issued by the California Department of Fish and Game.)

Canned Fish Consumer Purchases

FEBRUARY 1959: Canned tuna purchases by household consumers in February 1959, were 1,125,000 cases of which 46,000 cases were imported. By type of pack, domestic-packed tuna purchases were 224,000 cases solid, 720,000 cases chunk, and 135,000 cases grated or flakes. The average purchase was 1.9 cans at a time. About 34.3 percent of the households bought all types of canned tuna; only 1.6 percent bought the imported product. The average retail price paid for a 7-oz. can of domestic solid or fancy was 34.2 cents and for a 6-1/2-oz. can of chunk 28.2 cents. Imported solid or fancy was bought at 29.3 cents a can. February purchases were substantially higher than the 849,000 cases bought in January by 32.5 percent; retail prices were slightly lower.

During February, household consumer purchases of sardines continued to be made more through independent outlets than through chain outlets. Canned sardine purchases in February were 172,000 cases, of which 88,000 cases were Maine, 40,000 cases California, and 44,000 cases imported. The average purchase was 2.2 cans at a time for all sardines, but 2.6 cans for Maine, 1.6 cans for California, and 1.9 cans for imported. Only 9.0 percent of the households bought all types of canned sardines; 5.3 percent bought Maine, 1.7 percent California, and 2.6 percent imported. The average retail price paid for a 4-oz. can of Maine sardines in oil was 11.2 cents, for a one-pound can of California 24.4 cents, and for a 4-oz. can of imported 25.3 cents. February purchases were up by 36.5 percent from the 126,000 cases bought in January; retail prices were lower for domestic (except Maine sardines in oil) and imported. Because of the liberal stocks of canned California sardines, there has been an increase in purchases since October 1958.

Canned salmon purchases in February 1959 were 325,000 standard cases, of which 169,000 cases were pinks and 68,000 cases reds. The average purchase was 1.3 cans at a time. About 21.0 percent of the households bought all types of canned salmon; 10.4 percent bought pinks. The average retail price paid for a 1-lb. can of pink was 53.6 cents and for red 83.4 cents. February purchases were up about 24.5 percent from the 261,000 cases bought in January.

Clams

NEW ENGLAND HARD CLAMS THRIVE IN FLORIDA: An experiment of the U. S. Bureau of Commercial Fisheries Biological Laboratory at Milford, Conn., and the State of Florida showed that New England hard clams (Venus mercenaria) will thrive in Florida waters. The Laboratory sent very small clams to the State of Florida for planting. The clams not only survived but grew about five times faster than clams grow in colder northern waters.

Federal Purchases of Fishery Products

DEPARTMENT OF DEFENSE PURCHASES, JANUARY-FEBRUARY 1959: Fresh and Frozen Fishery Products: A total of 1.4 million pounds (value $777,000) of fresh and frozen fishery products were purchased in February by the Military Subsistence Market Centers for the use of the Armed Forces under the Department of Defense. The quantity of these purchases were lower than those in January by 3.5 percent and below February 1958 by 12.1 percent. The value of the purchases this February was 7.9 percent below the previous month and 22.4 percent below the same month a year ago.

Table 1 - Fresh and Frozen Fishery Products Purchased by Military Subsistence Market Centers, February 1959 with Comparisons

QUANTITY				VALUE			
February		Jan.-Feb.		February		Jan.-Feb.	
1959	1958	1959	1958	1959	1958	1959	1958
(1,000 Lbs.)				($1,000)			
437	1,634	2,926	3,326	777	1,001	1,621	1,944

For the first two months of 1959 purchases totaled 2.9 million pounds, valued at $1.6 million--a decrease of 12.0 percent in quantity and 16.6 percent in value as compared with the same period of 1957.

Prices paid for fresh and frozen fishery products by the Department of Defense in February 1959 averaged 53.6 cents a pound--3.1 cents a pound less than the previous month and 7.7 cents a pound less than in the same month in 1958.

Table 2 - Canned Fishery Products Purchased by Military Subsistence Market Centers, February 1959 with Comparisons

Species	QUANTITY				VALUE	
	February		Jan.-Feb.		Feb.	Jan.-Feb.
	1959	1958	1959	1958	1959	1959
	(1,000 Lbs.)				($1,000)	
Tuna	368	-	753	316	189	-
Salmon	-	-	-	695	-	-
Sardines	25	3	37	21	9	1

Canned Fishery Products: Tuna and sardines were the only canned fishery product purchased for the use of the Armed Forces during February 1959.

Fisheries Loan Fund

LOANS THROUGH MARCH 31, 1959: As of March 31, 1959, a total of 551 applications for fisheries loans totaling $18,234,453 had been received. Of these, 291 ($7,346,792) have been approved, 187 ($5,273,789) have been declined, 41 ($1,677,126) have been withdrawn, and 32 ($2,987,122) are pending. As several of the pending cases have been deferred indefinitely at the request of the applicants and collections are increasing, sufficient funds are available to process all new applications when received.

The following loans have been approved between January 1 and March 31, 1959:

New England and Middle Atlantic Area: Alfred E. Wotton, Friendship, Me., $5,936; and Edwin F. Cramer, Atlantic City, N. J., $11,000.

South Atlantic and Gulf Area: Henry Milton Forrest, Poquason, Va., $25,000.

California: Anthony Leonard, Napa, $4,000; Jose da Silva, San Diego, $60,000; Charles Strickler, San Francisco, $5,000; and Gilbert Charles, Sausalito, $7,600.

Pacific Northwest Area: Harold R. Jones, Everett, Wash., $8,000; Clifford J. Errett, Seattle, Wash., $9,000; James B. Fullilove, Seattle, Wash., $3,000; Jesse B. Meagher, Seattle, Wash., $11,000; and Harold C. Hansen, Seattle, Wash., $17,000.

Alaska: Henry Anderson, Juneau, $3,500.

Fishways

FISHWAYS WITH STEEPER GRADIENT TO BE TESTED AT ICE HARBOR DAM: The first full-scale test of some of the research on fishways at Bonneville Dam, conducted by the U. S. Bureau of Commercial Fisheries, will soon be made at the Ice Harbor Dam on the Snake River. The fishway on the south shore of the Ice Harbor Dam will have the standard gradient of 1:16 while the fishway on the north shore will have a gradient of 1:10. The 1:10 gradient is less steep than the experimental 1:8 gradient which Bonneville Dam experiments showed was apparently satisfactory for salmon acceptance. Continuous observations will be made at both fishways to obtain comparison data on the operation and efficiency of the fishways.

Florida

UNIVERSITY OF MIAMI AWARDED GRANT FOR MARINE RADIATION RESEARCH: A grant of $12,000 to the Marine Laboratory of the University of Miami to be used for basic research on radium distribution in the bottom sediments and the water above in the Florida Straits, the Bahamas, and the Caribbean area, has been made by the National Seamen Foundation.

This work is to ascertain how fast radium escapes from the sediments. It is produced by a thorium isotope which has been precipitated in the ocean waters. This originates from the uranium contained in all ocean waters.

Food Poisoning

COMMERCIAL FISHERIES BUREAU DIRECTOR STATES FLOUNDER FILLETS NOT DIRECTLY RESPONSIBLE FOR FOOD POISONING: It is regrettable that the recent publicity centering around the alleged food poisoning in New Jersey resulting from the use of flounder fillets has marred the splendid and progressive steps that this Nation's commercial fishing industry has taken to provide the consumer with the finest quality and widest variety of nutritional, high-protein, low-calorie fish and shellfish, stated Donald L. McKernan, Director of the U. S. Bureau of Commercial Fisheries, late in March.

McKernan further stated that he would await the investigation of the U. S. Food and Drug Administration with respect to the use of sodium-nitrite in this particular lot of fish since that agency is the one charged with the responsibility for protecting the foods sold in this country from adulteration. The Bureau had been in continuous contact with officials of the Food and Drug Administration from the very earliest report emanating from the food poisoning case in Haddon Heights, N. J., near Philadelphia, Pa. and confirmed the statement of John L. Harvey, Deputy Commissioner of Food and Drug, to the effect that the public has no cause for apprehension about the wholesomeness and safety of fish available in stores throughout the country.

The question of the use of sodium nitrite as an additive in fishery products in the United States has been carefully explored and so far its use has been outlawed. By exercising adequate controls on fish and shellfish from the time they are actually taken from the water until the time they reach the consumer there is no need for any such additives. Sodium nitrite is used in very limited quantities and under very careful supervision on fishery products in some other countries. It is also used as a preservative on certain types of meat products in this country.

It is unfortunate, McKernan further stated, that this case, which was local to the Philadelphia metropolitan area, received such widespread publicity throughout the Eastern seaboard, but on the other hand he commended the Food and Drug authorities and the local health officials for alerting the public to a potential hazard.

McKernan stated he wants the public's interest safeguarded by having consumers assured only of the highest quality fish. He indicated that this policy of the Bureau would be reiterated at the annual convention of the National Fisheries Institute in New York City, April 12-15. At that time a major portion of the nation's fresh and frozen fish producers and processors will be assembled to discuss mutual industry interests. In my opinion, McKernan stated, this matter must be given major consideration at the meeting.

Director McKernan also called attention to the program for voluntary standards for fishery products which has been established by the Bureau and adopted by various segments of the commercial fishing industry. This is further assurance that fishery products reaching the consumer are of the very highest quality. Products bearing the USDI Grade A symbol, stated McKernan, are packed under continuous inspection of U. S. Department of the Interior inspectors and will bring the ultimate in wholesomeness. The fishing industry feels so strongly about the establishment of these voluntary standards that it has petitioned the Bureau through a national trade association to increase this type of inspection service so the consumer will have complete confidence in fishery products.

The country's consumption of fish and shellfish showed a very encouraging increase this past year indicating the growing reliance that is being placed on fishery products in the home, restaurants, and other eating places.

McKernan stated the best evidence of the desire of the Philadelphia metropolitan area fish industry to keep pace with modern technological and merchandising practices is its plan to move into the new multimillion dollar Philadelphia Market Center when it is ready for occupancy within the next few months. The plans call for the most sanitary fish-handling facilities and will even include a test kitchen where new recipes for attractive fish and shellfish meals will be prepared for distribution to household and institutional consumers.

* * * * *

NEW YORK CITY HEALTH DEPARTMENT FINDS FISH SUPPLIES SAFE: The New York City supply of fishery products has been checked and declared wholesome and free from contamination. The Director of the Bureau of Food and Drugs, New York City Department of Health, has been informed by the Philadelphia area office of the U. S. Food and Drug Administration, that it has been definitely established that the fish which caused the poisoning in the Philadelphia and south Jersey areas late in March were processed in a Philadelphia plant and were contaminated there. None of the fish from that plant reached the New York City area.

As a precautionary measure, New York City Health Department inspectors checked all shipments of flounder fillets that arrived at the Fulton Fish Market and other wholesale outlets in that City and found no contamination in the fish. Five in-

spectors under the direction of the Chief of the Fish and Shellfish Division of the Health Department were at the Fulton Fish Market before they were open for business at 6 a.m. on March 26 to inspect fish fillets. Following the inspection, the wholesale fish dealers were permitted to distribute the products.

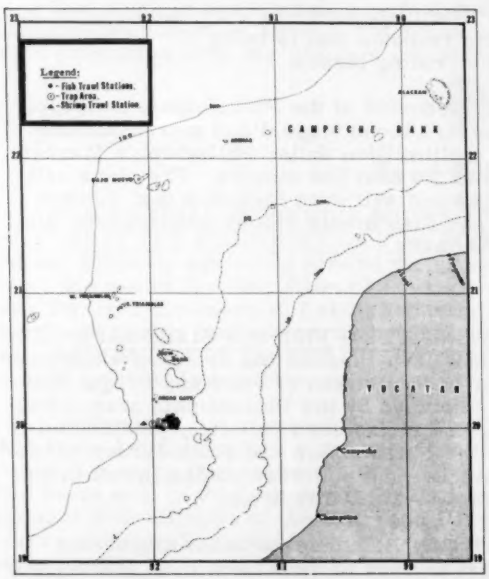
Great Lakes

CONTROL MEASURES IN MICHIGAN'S GREAT LAKES STREAMS TO BE CONTINUED: The U. S. Bureau of Commercial Fisheries in February was granted permission to continue its work in controlling and destroying sea lamprey in Michigan streams tributary to three of the Great Lakes. The Michigan Conservation Department Director designated 29 upper peninsula streams tributary to Lake Superior in which the Bureau may conduct chemical treatment; 83 streams tributary to Lakes Superior, Michigan, and Huron in which the Bureau may install, maintain, and operate screens, weirs, traps, and electrical devices.

To meet its June 30, 1960, deadline for chemical treatment of all Lake Superior lamprey streams, the Bureau will discontinue operating electrical barriers in 19 streams tributary to Lake Michigan during 1959 and 1960. The Bureau expects to operate its devices in the remaining 35 streams between April 1 and July 31.

Gulf Exploratory Fishery Program

EFFICIENCY OF TRAWLS VERSUS BAITED TRAPS IN RED SNAPPER FISHING ON CAMPECHE BANK (M/V Silver Bay Cruise 15): Comparative catch rates of baited bottom traps versus a modified New England-type otter trawl were studied by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel Silver Bay during a cruise (ended March 12, 1959) to Campeche Bank off the Yucatan Peninsula of Mexico.



M/V Silver Bay Cruise No. 15 (Feb. 24-Mar. 12, 1959).

Fifty-two trap stations were completed using conventional and modified arrowhead traps incorporating various entrance designs which were suggested by underwater television observations of snapper trap fishing by the Bureau's gear research vessel George M. Bowers. A total of 399 pounds of snapper and 296 pounds of grouper were taken in the 52 trap sets, with the modified traps accounting for approximately 80 percent of the total catch of 695 pounds.

Thirty-two drags were made in the same area using a modified New England-type fish trawl equipped with rollers and standard VD Rig. A total of 5,052 pounds of snapper and 803 pounds of grouper were taken during the trawling operation. Daily trawl catches averaged approxi-

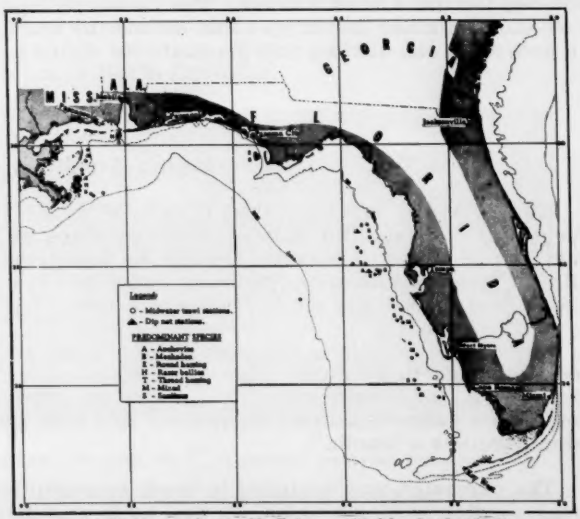
mately 1,500 pounds with individual catches ranging from 20 to 1,260 pounds per 90-minute tow. Gear damage was negligible and was limited to minor tears. Adverse weather conditions greatly curtailed the fishing effort throughout the trip.

Table 1 - Weight Tabulation of Snapper and Grouper Catch by Trawl (M/V Silver Bay Cruise 15)

Species	Common Name	Total Weight	Average Weight of Fish	Weight Range of Individual Fish
		(Pounds)		
Lutianus aya	Red snapper	3,565	8	1-20
Lutianus analis	Mutton or King snapper	1,125	10	6-18
Lutianus synagris	Lane or Rainbow snapper	289	1½	1-3
Lutianus griseus	Gray snapper	27	5	2-15
Lutianus apodus	Schoolmaster	15	15	15
Lachnolaimus maximus	Hogfish	31	8	6-12
	Total Snapper	5,052		
Epinephelus morio	Red grouper	77	8	4-12
Epinephelus nigretus	Warsaw	10	10	10
Mycteroperca bonaci	Black grouper	30	15	15
Mycteroperca falcata	Scamp	176	8	2-10
Promicrops itaira	Jewfish	510	250	225-300
	Total Grouper	803		

* * * * *

TRAWLING FOR MIDWATER INDUSTRIAL FISH STOCKS BETWEEN MISSISSIPPI DELTA AND CAPE ROMANO, FLA. (M/V Oregon Cruise 57): A total of 57 midwater trawl and two night-light stations were made by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel Oregon in the 5-40 fathom depth range from the Mississippi Delta to Cape Romano, Fla., from February 24 to March 18, 1959. The cruise was part of a series of cruises planned to discover off-the-bottom stocks of fish suitable for reduction, pet food, or canning.



M/V Oregon Cruise 57 (February 24-March 18, 1959).

Twenty-four tows in the Pass-a-Loutre-Chandeleur Island area (Mississippi Delta) yielded 6,570 pounds of mixed razorbellies (Harengula pensacolae), thread herring (Opisthonema oglinum), anchovies (Anchoa sp.), pinfish (Lagodon rhomboides), and menhaden (Brevoortia patronus). Individual catches ranged from 10-1,050 pounds per tow. One tow in 10-20 fathoms contained 870 pounds of menhaden. Off Dauphin Island, Miss., five tows produced only small amounts of anchovies.

The gear used in the trawling operations consisted of 40- and 60-foot square midwater trawls with mesh sizes tapering from 5 inches in the wings to ½ inch in

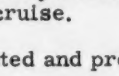
the cod end. A 500-watt lamp suspended approximately two feet above the surface was used for light-attraction studies.

Fairly dense concentrations of round herring (Etrumeus sp.) and Spanish sardines (Sardinella anchovia) were indicated on the vessel's electronic fish finders in 10-12 fathoms west of Cape San Blas, Fla. Five tows in this area, however, failed to produce catches of any significance.

A total of 23 tows was completed in the 10- to 30-fathom depth range between Cedar Keys and Cape Romano, Fla. Failure to locate midwater fish in this area by echo-sounding was reflected in the catch which averaged approximately 10 pounds of mixed round herring, thread herring, and Spanish sardines per tow. In this area heavy concentrations of mixed small round herring and anchovies were attracted by night lights on two occasions. No attempt was made to capture any significant quantity of these fish due to the lack of suitable gear.

Surface schools of fish which are normally abundant at this season were notably absent in the areas surveyed. This may be attributed to the adverse weather conditions that prevailed throughout the cruise.

Numerous samples were collected and preserved for future laboratory study by Bureau biologists and technologists.



Irradiation Preservation

GRANT FOR STUDY OF SEAFOODS FOR ARMED FORCES: A new grant of $14,000 has been made to Oregon State College to study irradiation-preservation of seafoods for the Armed Forces. The research (sponsored by the Quartermaster Food and Container Institute) could extend the market for fresh Oregon crab meat and provide fresh-tasting fish products for Army menus in distant areas.

Maine Sardines

NEWSPAPER ADVERTISING CAMPAIGN LAUNCHED: A 10-week newspaper advertising campaign for Maine canned sardines in 35 key markets from coast to coast was launched on March 17, 1959, by the Maine Sardine Council. The schedule calls for five insertions of 1,000-line color ads in each of 53 newspapers to be run on alternate weeks, and the budget is in excess of $200,000.

The copy will contain a maximum of art and a minimum of type and will be built around the nutrition values, flavor, convenience, and versatility of the product. The industry's history-making quality-control and grading program will also be featured along with a punch line that "Americans Are Now Eating More Than 125 Million Maine Sardines a Month."

The campaign was designed to boost consumption during the traditionally good spring sardine selling months, as well as to stimulate trade and consumer interest in the product for the 1959 pack season which gets under way in late May.

The markets to be covered are: Atlanta, Baltimore, Bangor, Birmingham, Buffalo, Charlotte, Chicago, Cincinnati, Cleveland, Columbia (S. C.), Dallas, Jackson, Houston, Jacksonville, Los Angeles, Memphis, Milwaukee, Minneapolis, Mobile, New

Orleans, New York, Newark, Oakland, Philadelphia, Portland (Me.), Richmond, St. Paul, St. Louis, San Antonio, San Francisco, Shreveport, Toledo, and Washington.

Menhaden

ATLANTIC FISHERY TRENDS IN 1958: The most striking feature of the menhaden fishery late in the summer of 1958 was the failure of the September-October "run" of large fish in southern Long Island waters. From 1952 through 1957, large old fish which occurred in the summer fishery farther northward appeared along the southern Long Island coast in September, where they provided excellent fishing through mid- or late October. No one knows why the run failed to materialize in 1958.

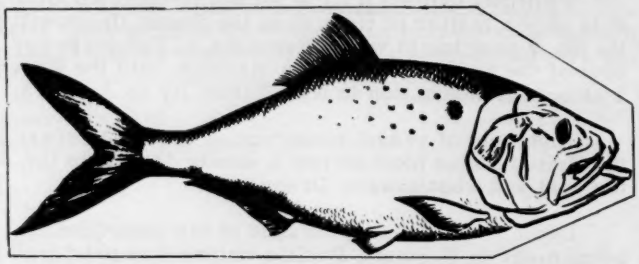


Fig. 1 - Menhaden (Brevoortia tyrannus), is similar in appearance to the herring, has a black spot just back of the head on each side, ranges in size from 5 to 8 inches, which make up most of the present catch, to a maximum of 18 inches.

The fishery in the fall of 1958 off the North Carolina coast was exceptionally good. The catch, based on preliminary data, was about 1,500 tons below the record set in 1956.

Data for 1958 on menhaden (which are used almost exclusively in the manufacture of meal and oil) reveal several interesting things. Two-year-old fish comprised a substantially greater proportion of the Chesapeake Bay catch than in any previous year (about 60 percent). Two-year-old fish in the Middle Atlantic attained the largest size in any year for which the U. S. Fish and Wildlife Service has data. Two-year-old fish constituted the bulk of the fall catch off the coast of North Carolina.

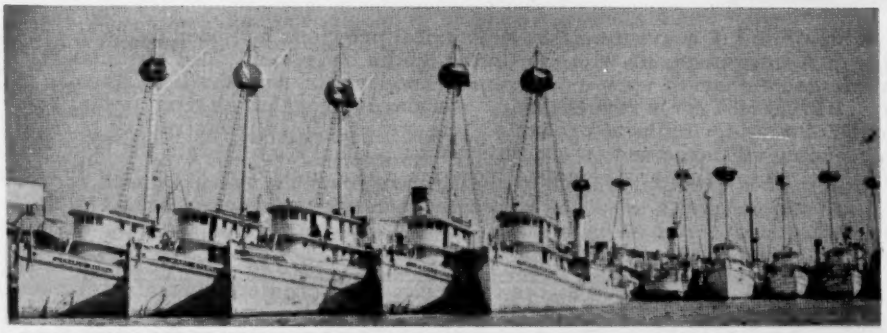


Fig. 2 - Part of the menhaden fleet at Beaufort, N. C., a center of menhaden operations.

For the past three years two-year fish have contributed substantially to the Chesapeake Bay fishery during the first part of the season. However, by early August these were replaced by one-year-old fish. This shift in age composition did not occur in 1958. This indicates that the 1956 year-class was either unusually abundant or the fish failed to move out of the Bay as indicated in the past. The result was that the two-year-old fish were chiefly responsible for the increased yield in the Bay.

In 1958 the Middle Atlantic fish were larger than they have been for the last six years. No one knows whether the increased growth represented generally better feeding or other environmental conditions or resulted from a lower population abundance. These larger-than-usual two-year-old fish appeared also in the North Carolina fall fishery and made the largest contribution to the catch in that area in both weight and number.

National Fisheries Institute

FISHING INDUSTRY PROBLEMS POINTED OUT BY INSTITUTE PRESIDENT: It is only a matter of time when the Soviet Union will push the United States out of its No. 2 position in world fisheries, L. Vernon Drape, New Bedford, Mass., president of the National Fisheries Institute, told the General Session of the group at its 14th annual convention in New York City on April 13.

High cost of vessel construction and the postwar trade and defense policies of the United States have forced a steady decline in the American fishing fleet on both the east and west coasts, Drape said.

Depletion and disappearance of the once-plentiful halibut whose last stand is being made in Northern Pacific waters was predicted by Drape with the denunciation of the recent invasion of these waters by a Russian fleet of from 50 to 75 trawlers.

"While we recognize that these are international waters, the Pacific halibut resource has been maintained only because United States and Canadian fishermen restrict their catches through regulations formulated under an international treaty. Fishermen of the two nations strictly adhere to an annual fixed quota of halibut. When the quota is reached, the season is closed," Drape explained.

Drape told the convention that, "should Russia continue to fish these waters without regard to seasons or regulations, the North Pacific halibut will be depleted beyond restoration."

Drape told the convention that substantial progress had been made in the marketing of fishery products with the United States consumer. The National Fisheries Institute has embarked upon a program in cooperation with the U. S. Bureau of Commercial Fisheries for a revolutionary standards program similar to that proved so successful with agricultural products. He stated, "in an industry like ours, it is a never-ending vigilance and an absolute essential that we maintain the best quality from the time the fish are removed from the water until they reach the dinner table."

* * * * *

ORDERLY SHRIMP MARKETING URGED AT ANNUAL CONVENTION: The unceasing demand in the United States for shrimp has created a booming market into which a word of caution was injected on April 13, by the President of the Shrimp Association of the Americas. The Association held its meeting at the same time as the 14th annual convention of the National Fisheries Institute in New York City.

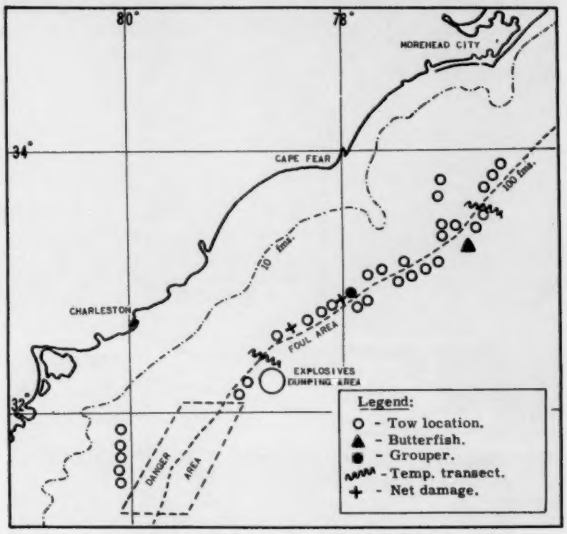
The Association President called for "a more orderly increase" in bringing the shrimp to market in contrast to the 22½ percent jump in imports last year and the accompanying vigorous fishing of shrimp beds throughout the world.

United States shrimp imports from all sources in 1958 rocketed to 85.4 million pounds, up from 69.7 million pounds for the same period in 1957.

"It was only a short time ago that we considered 150 million pounds of shrimp annually the top of the market. We are now consuming 210 million pounds and there appears to be no end in sight," said the Association's President. He also called for extension of international agreements and conservation laws to insure a continued source of supply of this vital protein food.

North Atlantic Fisheries Exploration and Gear Research

COMMERCIAL QUANTITIES OF BUTTERFISH AND GROUPER FOUND OFF CAPE FEAR, N. C. (M/V Delaware Cruise 59-2): Commercial quantities of butterfish (Poronotus triacanthus) and black grouper (Mycteroperca bonaci) were taken by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel Delaware during a February 16-March 2, 1959, cruise. A total of 4,000 pounds of small and medium-size butterfish were taken in one tow 60 miles east-southeast of Cape Fear at a depth of 150 fathoms (latitude 33°22' north, longitude 76°54'30" west), and 400 pounds of grouper were taken in another tow 60 miles south of Cape Fear at depths ranging from 96 to 100 fathoms (latitude 32°51' north, longitude 77°58' west). Other tows yielded quantities of small squid (Loligopealii), round herring (Etrumeus sadina), and chub mackerel (Pneumatophorus colias), but these and other species were not taken in commercial quantities.



M/V Delaware Cruise 59-2 (Feb. 16-Mar. 2, 1959).

This cruise was the second exploratory cruise made off the coasts of the Carolinas and Georgia by the Delaware. The first cruise was made in February 1958 and was marked by an excellent catch of red snapper (Lutianus sp.) southeast of Cape Lookout; the species was not found during the 1959 cruise. The prime objective of the second cruise was to expand the survey along the edge of the Continental Shelf in this area for commercial concentrations of fish and to resample the areas previously worked. However, some sampling was done in more shoal water for comparative purposes. Tows were made at 34 stations using a standard No. 41 otter trawl equipped with 45 feet of wooden rollers and a small mesh liner in the cod end. The rollers helped to minimize damage to, and loss of, gear which was nevertheless considerable. The area surveyed included a considerable amount of unfishable bottom in the deeper water. A complete net was lost in 81 fathoms (latitude 32°34' north, longitude 78°31' west), and extensive damage to the lower wings and bottom belly of the net was incurred in 98-100 fathoms (latitude 32°53' north, longitude 77°55'30" west).

In addition to the 34 trawl stations, two oceanographic transects were made. Bottom-water temperatures recorded on similar transects during the 1958 cruise indicated that the water was warmer at the 75-fathom depth than at shallower or greater depths. This year's data failed to indicate the presence of this warm-water intrusion. With but one exception, all bottom-water temperatures taken at the 75-

fathom depth were in close agreement with those taken from adjacent deeper and more shallow depths. Butterfly fish and other tropical species which were present in the same areas last year, were not found this year. It has been reported by local fishermen that the southerly current flow along the coast seems to be much stronger than in previous years.

North Pacific Exploratory Fishery Program

FISHING GEAR RESEARCH PLANNED IN PUGET SOUND (M/V John N. Cobb Cruise 41): Gear research studies will be made by the U. S. Bureau of Commercial Fisheries Exploratory fishing vessel John N. Cobb from February 9-March 27, 1959, in Puget Sound. The studies will be made in the shallow water areas of Puget Sound, including East Sound, Holmes Harbor, Hood Canal, or other areas exhibiting desirable bottom and water characteristics.

The John N. Cobb, a vessel operated by the Service's Bureau of Commercial Fisheries.

Studies will include use of otter trawls (modified to increase their efficiency) to determine their effectiveness under actual fishing conditions, Evaluations are to be made of the degree to which horizontal and vertical spread is affected by the net modifications. Three different types of otter-trawl doors will be tested to determine the importance of design in spreading the trawl.

Tests will be evaluated by SCUBA divers while working from a sea sled. The divers will read and record force measurements taken at various points on the trawls, as well as noting the operating characteristics of the trawls. Still and motion pictures will be made to aid in the final evaluation of the underwater tests on the otter-trawl gear.

Pacific Oceanic Fishery Investigations

OBSERVATIONS ON CALIFORNIA CURRENT EXTENSION IN VICINITY OF HAWAIIAN ISLANDS CONTINUED (M/V Hugh M. Smith Cruise 50): In an effort to delineate the California Current Extension, the U. S. Bureau of Commercial Fisheries research vessel Hugh M. Smith on cruise 50 (which ended February 10, 1959) conducted operations in the area 13° N. to 23° N. latitude, 147° W. to 170° W. longitude--extending from 500 miles west of Oahu to a point 700 miles east and as far south as 600 miles. Bathythermograph and surface salinity samples were obtained at approximately 30-mile intervals.

Surface water, with salinities and temperatures which could be called the "North Pacific Equatorial" type, was found to have spread to 20° N. to the east of Hawaii. This equatorial type water to the southwest was found south of the line between 18° N., 158° W., and 15° N., 168° W. Surface waters with salinities and temperatures which could be called the "North Pacific Central" type were found to the north. The transition zone between these two water types was from 30 to 150 miles wide. Water of the California Current Extension with salinities and temperatures intermediate to the two types mentioned above, and with which it is assumed that season fish are associated, was found only in a few restricted areas.

A total of 39 stations were occupied during the cruise of which there were 11 long-line stations with 40 baskets of 11-hook gear. The remainder of the stations were 0-60 meter oblique plankton hauls. Although analysis of the significance of the data from the biological samples must await the completion of the remaining two of this series of three cruises scheduled during the advent of the Hawaiian skipjack season, the absence of season skipjack within the cruise area was strikingly evident. This absence indicates that these fish were not associated with either North Pacific Central or North Pacific Equatorial water in the vicinity of the Hawaiian Islands during the winter months and suggest that they migrate to different parts of the ocean more than 500 miles away from Hawaii.

Note: Also see Commercial Fisheries Review, September 1958, p. 62.

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TILAPIA REARING EXPERIMENTS CONTINUED: The U. S. Bureau of Commercial Fisheries tilapia plant at Paia, Maui, which had been held on a stand-by basis during January and most of February, was re-activated in late February, under terms of an agreement signed by the Maui Fisheries and Marine Products, Ltd., the Territory Board of Agriculture and Forestry, and the U. S. Bureau of Commercial Fisheries. The re-activation of the plant provides an opportunity to test methods developed at the Kewalo plant for inducing early spawning and to evaluate the cost of employing these methods on a commercial scale during the spring months when the fish are normally inactive. The Bureau's scientists hope to obtain further information regarding the utilization of the bait-size tilapia at sea as the skipjack season was very poor last year and did not provide proper conditions for testing a new bait fish.

The brood tanks were drained on February 25-27 and the adult fish, as well as the young fish which had accumulated since last December, were removed. The adults were then returned to the brood tanks in the ratio of 200 males to 600 females to a tank, which allots 4.1 sq. ft. of bottom area to each male.

Last year's operation allotted 3.6 sq. ft. per male but experiments conducted at the Kewalo plant indicated that the most productive sex ratio and brood stock concentration was a 3:1 ratio of females to males with an area of 4 sq. ft. per male. The present stocking of brood fish was, therefore, carried out in accordance with these results.

The methods developed at the Kewalo plant by the Bureau of Commercial Fisheries and the Territorial Fish and Game indicate that spawning can be induced during the winter months by increasing the water temperature. Heating elements are on order for the brood tanks at Paia and it is hoped that by increasing the water temperature a significant increase in production can be obtained during the coming spring months over that of 1958 when production did not reach a favorable level until June.

Note: Also see Commercial Fisheries Review, February 1959, p. 30.

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TUNA RESOURCES SURVEY IN MARQUESAS AND TUAMOTU ISLANDS AREA ENDED (M/V Charles H. Gilbert Cruise 43): The completion of a 2½-year oceanographic and fishery research program (principally to assess tuna resources) in the Marquesas and Tuamotu Islands was marked by the return to Honolulu on March 26, 1959, of the Bureau of Commercial Fisheries research vessel Charles H. Gilbert, from a 79-day trip. A United States west coast tuna clipper, the Cape Falcon under charter to the Bureau, took part in this last survey of the area to determine if tuna was sufficiently abundant for live-bait fishing on a commercial scale.

The research vessel was primarily engaged in determining the abundance of surface schools of skipjack and yellowfin along survey tracks which had been followed during previous cruises. It was found that the number of schools sighted was less than half of those reported during the same seasons in 1957 and 1958; also, that the fish were small, averaging about 6 pounds, and the schools, although large, were frequently wild and difficult to chum to the vessel.

A fishery biologist from the Bureau's Fishery Laboratory in Hawaii accompanied the Cape Falcon from San Diego, Calif., to Almejas Bay, Mexico, where 24,000 pounds of live bait were loaded prior to proceeding to the Marquesas. He reports that a total of nearly 200 schools, mostly skipjack and yellowfin, was sighted in the waters of French Oceania. The vessel caught only 16 tons in the season proven to be best from surveys made in previous years. This disappointingly low figure resulted from the comparative scarcity of schools, the small size of the fish, their wildness, and the fact that the Mexican bait was too large.

Approximately 1,000 live Marquesan sardines were released in Maunalua Bay, Oahu. This is the eighth Oahu release of these fish which were introduced as a possible supplement to the nehu, which is in short supply and is the principal live bait used by the Hawaiian tuna fishing fleet. Since the first release made in December 1955, recoveries have been made, usually by commercial fishermen during baiting operations, from waters near the Islands of Kauai, Maui, Hawaii, and Oahu. Those sardines caught near Kauai, Oahu, and Hawaii are believed to be the result of spawning in the Hawaiian area, indicating that these fish, transported from French Oceania, have been established in Hawaiian waters.

Practical Method of Preventing a Purse-Seine Net from Sinking to Its Full Depth

One of the problems facing purse-seine fishermen is whether or not to lay out the net when fish are running in waters shallower than the net. As the purse-seine nets now used in California have a stretched depth of from 29 to 40 fathoms (174-240 feet), the only practical time nets can be layed out in shallower waters is when the bottom is sandy and free of snags. Under those conditions sets can be made in depths as shallow as five fathoms (30 feet) without any trouble. In fact, shallow sets are the most efficient, as the fish cannot sound and escape the net by going under the leads.

The problem in setting nets in shallow waters comes when the bottom is rocky, or contains other snags such as shipwrecks, old buoys or anchors, waterlogged trees, etc. Risking a net at today's prices for synthetic netting is not practical yet it is attempted many times, sometimes with disastrous results.

Usually, in order to decrease the depth to which a purse-seine net sinks, one or sometimes two strips of netting are removed from the seine. This involves a good

deal of work, usually a full day, and by the time it is done the fish may have moved to deeper water, where the shallow net cannot catch them. This type of work is frustrating to say the least, and many ideas have been tried over the years, including carrying two nets, one deep and the other shallow.

In order to eliminate the risks inherent in setting a deep net in shallow water, one of the most successful purse-seine captains fishing out of San Pedro, Calif., has devised a method of cutting down the distance the net sinks in the water. The method, which has been used for two years by this captain, is according to him very practical and has been used many times without any trouble. He uses it on both his tuna

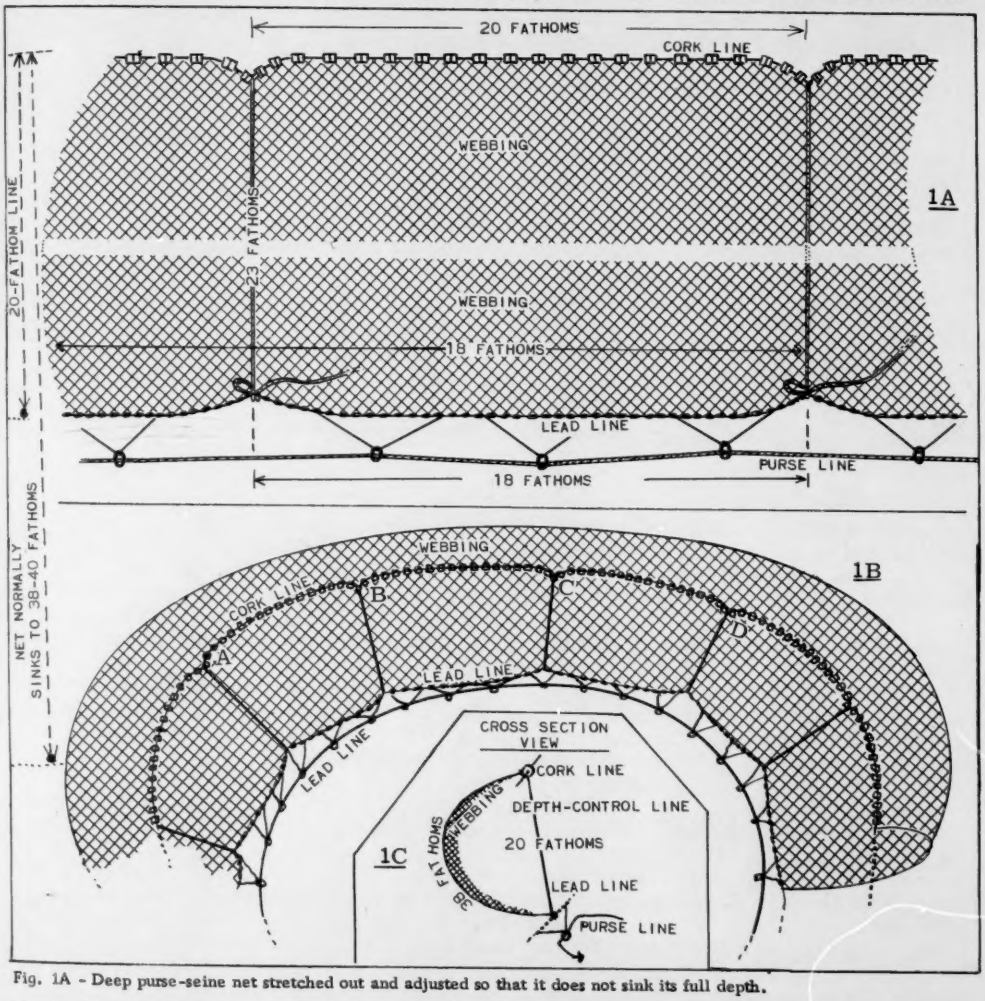


Fig. 1A - Deep purse-seine net stretched out and adjusted so that it does not sink its full depth.

Fig. 1B - Top view of deep purse-seine net shows how the webbing balloons out behind the cork and lead lines. The only visible effect is at points A, B, C, D, etc. where the corks dip slightly where the lines are tied.

Fig. 1C - Showing how the 38 fathoms of webbing balloons out behind the cork and lead lines. The purse line prevents the webbing from sinking any deeper than about 23 fathoms between depth control lines.

and sardine purse-seine nets, and it is very economical both as to time and cash outlay. It consists of a number of 20-fathom (120-foot) long nylon ropes which are permanently tied to the cork line 20 fathoms apart. When the captain wants the depth decreased, the loose end of the nylon rope is tied to the chain lead line at a point directly across the width and inside the net. These points have previously been marked on the chain lead line by painting two or three links, and in the case of the lead line are 18 fathoms apart. The difference in the distance between ropes along the lead line from those on the cork line is due to the practice of hanging nets "in" at the lead line at the ratio of 10 to 9. This "hanging in" makes the net bag or balloon out, and is a desirable feature in purse-seine nets. On his tuna net, which is about 40 fathoms deep, the 20-fathom long lines hold the net up so that between ropes it will dip only about 22-23 fathoms (132-138 feet). To date, he had not used this method to shorten the depth of his tuna net anything less than 22-23 fathoms, but he had decreased the depth of his sardine net to about 15 fathoms (90 feet).

When the vessel is operating in deep waters, the lines are not tied to the lead line, but are allowed to dangle free. Hanging loose they are no problem, and when the net is brought back aboard each line is passed across the width of the net and layed over the lead line near the marked point, leaving about a fathom free. If the vessel goes into shallow waters, which are known or suspected to be foul, one or two of the crew members tie the loose ends of the lines to the leads at the marked points. They take two turns around the chain and then tie a running or slip knot. This entire operation takes only 2 or 3 minutes. If the lines have been tied and a set is not made, when the vessel moves out into deeper water and the extra depth is needed, it is an even simpler matter to pull the knots loose.

When questioned about the possibility of the lines breaking when the purse line is pulled tight and a strong tide is running, the captain states that he has experienced no broken lines using one-half inch diameter nylon rope, which he considers strong enough.

If the net were allowed to hang free for any length of time, the webbing, which is about 38 fathoms (228 feet long) in his tuna seine could dip to about 28 or 29 fathoms (168-174 feet). This does not happen, however, since when the purse line is being drawn in the net balloons back behind the corks and leads, giving the fish more room to swim in, and is very effective in confusing them and making the net more efficient.

The possibility of decreasing the depth of the net more than 20 fathoms seems to be limited only by the length of the depth control lines. In practice, however, the captain now using this method states that anything under 10 fathoms (60 feet) would, in his opinion, not be practical. He feels that the web would bag out behind the lead and cork lines properly, but that it would sink from its weight, closing the bag and dragging across the bottom with the danger of snagging.

During the past two years the captain estimates that he used this method in at least 20 percent of the sets he made. Whether or not he increased his catches by the same figure, however, is a moot question, as he may have caught fish somewhere else, keeping away from the shallow spots. The captain feels, however, that about a 10-percent increase in catch would be a realistic estimate. Where it helps this captain the most is in eliminating snags with subsequent loss of netting and time. Being an aggressive fisherman he averaged 3 or 4 snags per year without this method. Since using this method for the past two years, he has had none, meanwhile laying his net out in many places he would not have considered before.

--A. D. Sokolich, Market News Reporter,
Branch of Market News,
Division of Industrial Research and Services,
U. S. Bureau of Commercial Fisheries, San Pedro, Calif.

Rail Express

REQUEST FOR RATE INCREASE WITHDRAWN: The Railway Express Agency in March 1959 asked the Interstate Commerce Commission for permission to withdrawn its proposed 3½-percent increase in rates, effective immediately, on the ground that even if granted it would be "totally inadequate" to cover costs. In its petition the Agency contended that it is "no longer in a position to continue subsidizing the users of express service by transporting express traffic at out-of-pocket losses." It estimates a deficit of $38,000,000 in 1959 on an out-of-pocket cost basis.

It has also been announced that the Agency's Board of Directors will meet in the middle of April to consider various proposals for continuing express operations. The Pennsylvania Railroad has recently submitted a proposal which would grant Eastern railroads 7 percent more revenue than they are currently receiving. Legislation has also been introduced which would require the U. S. Post Office Department to take over express operations.

Salmon

BLOOD TESTS USED TO DISTINGUISH RACIAL STOCKS: The development of serological techniques or blood tests is one of the most promising methods of attacking the problem of identifying North Pacific Ocean high-seas salmon stocks as to Asiatic or North American origin. The U. S. Bureau of Commercial Fisheries Biological Laboratory at Seattle, Wash., has done a great deal of this serological work and reports that the research progresses slowly because of the lack of adequate stocks of serum made from rabbit blood.

Laboratory personnel are exploring the feasibility of obtaining horse and goat sera so that the research can progress more rapidly. Because sera from animals such as rabbits, horses, and goats do not give the desired refinement, the Seattle staff is investigating the use of the iso-immunization technique whereby sera are developed from captive salmon. This technique will enable the researchers to develop methods for much finer discrimination between salmon races than heretofore.

* * * * *

SALMON PACKERS IN WASHINGTON SEEK TO LIFT BAN ON FISH TRAPS IN ALASKA: The Washington State packers of canned salmon late in March 1959 were seeking to enjoin the U. S. Department of the Interior from banning or eliminating the use of salmon traps in Alaska. A suit was filed in the Federal District Court by the attorney of the canners. The complaint was that the Government order banning the traps is unlawful. A 30- to 40-percent loss in revenue will be caused by the ban, the canners report. In 1958, Alaska's salmon fishing industry is estimated to have yielded a gross revenue of $65 million. The percentage loss in revenue was estimated to be the amount that was derived from the use of traps as opposed to other types of salmon fishing gear.

The Interior Department trap ban in Alaska was issued as a conservation measure under powers extended to the Department during Alaska's transition from a territory to a state. But the packers' complaint pointed out that such an "abrupt" change is unlawful, particularly in view of the canners' complaints that the trap ban will close six canneries and throw out of work some 2,200 persons dependent for jobs on the use of the traps. The complaint seeks a preliminary injunction as a prelude to a permanent voiding of the trap ban. The suit also explained that "no substantial increase in catch" can be expected from the use of seines or other mobile fishing gear.

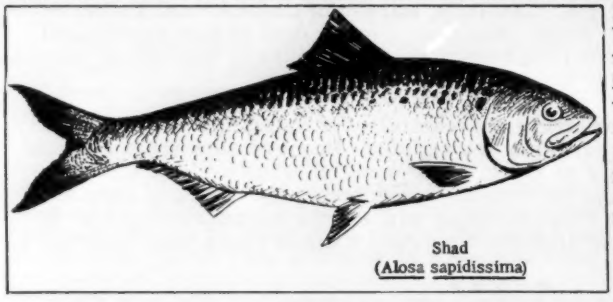
Shad

VIRGINIA AND FEDERAL BIOLOGISTS COOPERATE ON STUDY OF YORK RIVER RUN: A cooperative study of the shad run in Virginia's York River was started early this year by biologists of the U. S. Bureau of Commercial Fisheries and the Virginia Fisheries Laboratory at Gloucester Point.

The Bureau biologist, who is directing the research, outlined the purposes of the study in this way: "We want to follow changes in the fisheries. Probably four times as many drift-netters are operating in the River now as there were in 1952 when the last survey was made. Besides that we would like to check the importance of shad as a sport fish. We are always interested in knowing the abundance of shad in the run each year and records we collect this spring will be a continuation of those the Virginia Laboratory biologists have been gathering for the past several years."

Scientists have developed improved tags in the last few years which will be employed for tagging shad this spring. Instead of the metal pin used to hold two discs against the back of the fish, streamer-type tags will be used. "Fishermen will be happy to know that this streamer tag will not hang in their nets and tangle them like the Petersen disc-type did," the Bureau biologist reported. "They are also much easier to remove from the fish."

Pictures of the tag on a fish will be posted in several places along the River so that fishermen will know what to look for. The biologists anticipate tagging about 1,000 shad at the mouth of the York River. Varying numbers will be released each week during the upriver run. Tags returned from fish caught on rod and reel or in nets will enable scientists to estimate the total number of fish reaching the spawning grounds. It is in the best interests of the sport and commercial fishermen to return all tags. A reward of 50 cents will be paid for each tag returned.



Shad
(Alosa sapidissima)

Scientists will also need records from fishermen to complete their studies; therefore, a crew of four biologists will distribute log books to fishermen and ask them to keep records of their catches.

In past years, Bureau biologists have studied shad runs from the Connecticut River, Conn., to the St. John's River, Fla. "It is interesting to note," the Bureau biologists stated, "that shad entering rivers in Florida and all the way up to the Neuse River in North Carolina die after spawning. Further up the coast a larger percentage of spawned shad return to the ocean. In Chesapeake Bay, for instance, around 15 to 20 percent of those reaching the ocean after having spawned return the following year. In the Connecticut and Hudson Rivers, between 35 and 50 percent return and appear in the fishery the following year. This accounts, in part, for the larger fish usually caught in northern waters. Six- and seven-pound shad are not uncommon in the Connecticut River.

Near the close of the spawning season, fish will be tagged on the spawning grounds to help scientists determine whether the home-stream theory is true. If marked fish return in future years to the York River, it will substantiate that shad do return to their home rivers. Tagged fish also help indicate migratory patterns.

Sport Fishing

Nearly a million more fishing licenses were sold in the United States during the fiscal year ending June 30, 1958, than in the previous fiscal year, but hunting licenses showed a decline of about 154,000, the U. S. Fish and Wildlife Service reported on March 1, 1959. The combined total of 34,941,729 licenses sold to sportsmen in 1958 exceeded all previous records, and represents an increase of 746,546 over the 1957 record of 34,195,183 licenses.

The 1958 total was made up of 20,177,605 fishing licenses and 14,764,124 hunting licenses; in the previous year 19,276,767 fishing licenses and 14,918,416 hunting licenses were sold. The increase in fishing licenses amounted to 900,838; the decrease in hunting licenses was 154,292.

Total cost to hunters and anglers for all licenses, permits, tags, and stamps (not including the Federal "duck stamp") was $99,018,130--an increase of $8,401,091 over the previous year's total of $90,617,039. Hunting licenses amounted to $53,607,668 of the 1958 total while fishing licenses cost $45,410,462.

Resident fishing licenses accounted for 17,401,982 of the total; nonresident licenses numbered 2,775,623. The States which attracted the greatest number of nonresident fishermen were Wisconsin (363,332), Minnesota (305,160), Michigan (254,658), Arkansas (167,186), Tennessee (165,257), and Florida (164,767). California led in resident fishing licenses, with 1,388,433; Minnesota was second with 1,104,591; Ohio had 876,633.

Table 1 - State Fishing Licenses Issued in the United States, July 1, 1957 to June 30, 1958

State	Fishing Licenses			Total Cost to Anglers for All Licenses, Permits Stamps, etc.
	Resident	Non-Resident	Total	
	(Number)			$
Alabama	464,050	27,046	491,096	767,593.15
Arizona	173,412	18,250	191,662	501,403.50
Arkansas	287,713	167,186	454,899	943,579.60
California	1,388,443	20,255	1,408,698	4,112,077.00
Colorado	274,901	118,402	393,303	1,429,290.50
Connecticut	104,651	3,748	108,399	410,520.59
Delaware	9,996	1,326	11,322	23,689.50
Florida	315,432	164,769	480,201	979,127.75
Georgia	434,839	14,918	449,757	603,830.33
Idaho	172,869	64,664	237,533	916,256.50
Illinois	793,370	20,151	813,521	1,219,518.75
Indiana	796,359	38,792	835,151	1,090,004.75
Iowa	384,609	13,369	397,978	598,452.72
Kansas	243,256	6,498	249,754	511,642.75
Kentucky	334,627	81,501	416,128	780,487.00
Louisiana	159,664	29,210	188,874	260,456.00
Maine	141,447	76,598	218,045	781,648.12
Maryland	82,980	15,196	98,176	322,319.50
Massachusetts	222,817	5,419	228,236	653,746.87
Michigan	854,776	254,658	1,109,434	2,411,016.00
Minnesota	1,104,591	305,160	1,409,751	2,318,168.50
Mississippi	139,780	57,320	197,100	402,300.00
Missouri	598,441	70,124	668,565	1,792,820.00
Montana	199,731	52,902	252,633	678,086.50
Nebraska	184,303	9,780	194,083	378,847.15
Nevada	26,319	25,622	51,941	208,737.50
New Hampshire	81,977	52,976	134,953	446,610.25
New Jersey	141,540	9,922	151,462	599,416.25
New Mexico	77,807	38,237	116,044	438,264.30
New York	771,245	47,772	819,017	1,604,129.75
North Carolina	349,616	40,460	390,076	794,599.03
North Dakota	76,340	2,533	78,873	83,939.00
Ohio	876,633	25,257	901,890	1,855,485.00
Oklahoma	399,710	86,342	486,052	1,072,020.75
Oregon	349,966	27,755	377,721	1,285,322.25
Pennsylvania	656,848	29,680	686,528	1,811,506.60
Rhode Island	16,187	739	16,926	36,097.02
South Carolina	228,622	17,408	246,030	461,721.75
South Dakota	85,186	41,317	126,503	242,253.00
Tennessee	558,267	165,257	723,524	850,601.00
Texas	818,341	-	818,341	1,741,431.65
Utah	126,467	12,275	138,742	421,480.75
Vermont	72,817	36,248	109,065	260,694.75
Virginia	365,597	15,150	380,747	611,826.83
Washington	377,180	20,975	398,155	1,606,111.37
West Virginia	216,354	10,275	226,629	461,614.65
Wisconsin	748,247	363,332	1,111,579	2,788,045.25
Wyoming	113,659	68,849	182,508	626,670.50
Totals	17,401,982	2,775,623	20,177,605	45,410,462.33

Note: Also see Commercial Fisheries Review, May 1958, p. 41.

United States Fishing Fleet[1/] Additions

DECEMBER 1958: A total of 28 vessels of 5 net tons and over were issued first documents as fishing craft in December 1958. Compared with the same month of

Table 1 - U. S. Vessels Issued First Documents as Fishing Craft by Areas, December 1957 and 1958, and Annual Totals 1955-58

Area	December		Total			
	1958	1957	1958	1957	1956	1955
	(Number)					
New England	1	1	13	19	15	18
Middle Atlantic	-	1	13	23	26	13
Chesapeake	6	5	99	104	138	54
South Atlantic	4	11	135	130	119	65
Gulf	11	23	270	166	100	103
Pacific	5	4	112	102	76	117
Great Lakes	1	1	10	8	6	9
Alaska	-	1	31	48	40	35
Hawaii	-	-	-	-	1	3
Puerto Rico	-	-	-	1	-	-
Virgin Islands	-	-	1	-	-	1
Total	28	47	684	601	521	418

Note: Vessels assigned to the various sections on the basis of their home ports.

1/Includes both commercial and sport fishing craft.

Table 2 - U. S. Vessels Issued First Documents as Fishing Craft by Tonnage, December 1958

Net Tons	Number
5 to 9	11
10 to 19	6
20 to 29	5
30 to 39	4
40 to 49	1
50 to 59	1
Total	28

1957, this was a decline of 19 vessels. The major portion of the decline occurred in the Gulf States where only 11 vessels were issued first documents, compared with 23 in December 1957.

YEAR 1958: Fishing craft issued documents as fishing craft during 1958 totaled 684 vessels--an increase of 83 vessels as compared with 1957. Of the vessels documented for fishing, 40 percent were reported from the Gulf States.

Table 3 - U. S. Vessels Issued First Documents as Fishing Craft, 1938-1958

Year	Number
1958	684
1957	601
1956	521
1955	418
1954	717
1953	729
1952	675
1951	780
1950	812
1949	1,002
1948	1,184
1947	1,300
1946	1,085
1945	741
1944	635
1943	358
1942	358
1941	354
1940	320
1939	357
1938 1/	376

1/Data are partly estimated.

U. S. Foreign Trade

GROUNDFISH FILLET IMPORTS, FEBRUARY 1959: Imports of cod, haddock, hake, pollock, cusk, and ocean perch fillets (including blocks) into the United States during February 1959 amounted to 10.3 million pounds--a decline of 8 percent as compared with the same month of last year.

During the first two months of 1959, imports of cod, haddock, hake, pollock, cusk, and ocean perch fillets (including blocks) amounted to 29.3 million pounds--35 percent above the amount reported for the same period of last year. Canada accounted for 44 percent of the total imports during January-February 1959.

The quota of groundfish and ocean perch fillets and blocks permitted to enter the United States at $1\frac{7}{8}$ cents per pound in the calendar year 1959 is 36,919,874 pounds, based on a quarterly quota of 9,229,968 pounds. The quota for the calendar year 1958 amounted to 35,892,221 pounds. Imports during individual quarters in excess of the established quarterly quota enter at a duty of $2\frac{1}{2}$ cents a pound.

Note: See Chart 7 in this issue.

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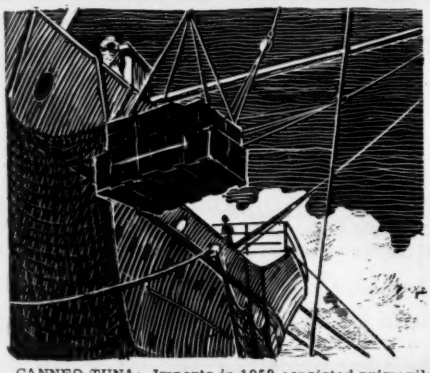
IMPORTS AND EXPORTS OF SELECTED FISHERY PRODUCTS, 1958: Summary: The quantity of selected fishery products imported into the United States during 1958 was higher than during 1957. Several products were imported at a record high. Exports of fishery products, as usual, were low compared with imports.

In quantity imported, tuna was again the leading product, followed by groundfish and ocean-perch fillets and blocks, fish meal, shrimp, and salmon. Fresh and frozen tuna imports were 42.1 percent above those of 1957. Canned tuna imports were up 4.1 percent. Other increases were: groundfish and ocean-perch fillets and blocks up 15.7 percent; shrimp up 22.5 percent; fresh, frozen, and canned salmon up 38.2 percent; and fish meal up 23.6 percent.

The quantities of the major fishery products exported in 1958 varied considerably from those of 1957. Fish oils, though the leading export, decreased 18.1 percent. Other decreases in exports were: canned mackerel down 86.5 percent and miscellaneous canned fish (mostly canned anchovies) down 89.9 percent. Increases were: fresh or frozen miscellaneous fish, mostly fresh-water species, up 72.6 percent; canned salmon up 38.0 percent; and canned sardines, not in oil, up 19.4 percent.

Imports: FROZEN TUNA: The 1958 over-all imports of frozen tuna rose to a record 197,961,000 pounds; 80 percent of these imports were received from Japan. However, imports of frozen albacore were down 20.8 percent from 1957, owing to a poor 1958 fishing season by Japanese fishermen. Instrumental in setting the record imports were receipts of 110,997,000 pounds of other frozen tuna (principally yellowfin) from Japan, 125 percent more than in 1957. The most significant feature in the 1958 tuna trade was the large receipts of tuna caught by the Japanese in the Atlantic and transshipped to the United States through third countries. Although beginning only in September, imports of Japanese-caught Atlantic tuna into California were 3.7 percent of the State's yearly imports of frozen tuna. The amount of Japanese-caught Atlantic tuna imported into Puerto Rico and the U. S. east coast and Gulf ports was believed to be higher than that imported through California. Because of a self-imposed embargo from January to September, the 1958 shipments of tuna loins and discs from Japan fell to 2.8 million pounds, down from 10.6 million pounds in 1957. Imports of loins and discs from other countries increased from about 1.5 million pounds in 1957 to about 2.2 million pounds in 1958.



CANNED TUNA: Imports in 1958 consisted primarily of tuna canned in brine. The 1958 quota of 44,693,874 pounds which was designated to be imported at the 12-1/2 percent ad valorem rate of duty was exceeded by about 750,000 pounds. The excess was dutiable at 25 percent ad valorem. Canned tuna in oil, subject to a 35-percent ad valorem duty, was imported in small amounts.

FRESH AND FROZEN GROUNDFISH FILLETS: Imports of groundfish fillets in 1958 increased as higher receipts of cod and ocean-perch fillets more than offset lower receipts of haddock fillets. Receipts of blocks and slabs of fillets were slightly above those of 1957. Canada, despite a slight decrease in its 1958 shipments, remained the most important supplier of groundfish and ocean perch, sending 71.1 percent of the fillets and 68.1 percent of the blocks imported into the United States. Iceland, with 23.8 percent of the total groundfish fillet imports, almost doubled its 1957 shipments. Among Iceland's shipments were nearly 16 million pounds of frozen blocks of bits and pieces; this was about 10 percent of all fresh or frozen groundfish fillets imported from all sources. By a decision of the Bureau of Customs, blocks of bits and pieces are imported at a rate of 1 cent per pound, under paragraph 720 (b) of the Tariff Act.

SHRIMP, MOSTLY FROZEN: The quantity of shrimp imports continued its record-breaking rise. The 1958 receipts were more than double the annual average of the 1950-54 period. Mexico, again the most important supplier, sent 65.7 percent of the total. Panama, Ecuador, and Hong Kong were other important sources.

CANNED SALMON: A record high of 29.2 million pounds was imported in 1958. Shipments from Japan, although less than in 1957, were 73.2 percent of the total. Canada sent 7.8 million pounds, or nearly five times more than in 1957.

CANNED SARDINES: The decline in imports of canned sardines in oil in 1958 was primarily due to lower Norwegian shipments, which fell to 11 million pounds or about 16 percent less than in 1957. Imports of canned sardines, not in oil, rose as receipts from the Union of South Africa increased to 7.9 million pounds, over two times those of 1957.

OYSTERS, MOSTLY CANNED: The record 1958 receipts were nearly nine times the annual average of the 1949-53 period. Japan shipped about 94 percent of the 1958 total.

FISH MEAL: Canada, which supplied over half the fish meal imported in 1957, sent only 27.7 percent in 1958. Peru doubled its 1957 shipments and became the main source with 33.3 percent of the total in 1958.

Exports: CANNED SARDINES NOT IN OIL: Despite the 19.4-percent increase in quantity over 1957 exports, shipments in 1958 were below expectations. In 1958 the California sardine canning industry had its best pack since 1951. The world market for this product, however, has changed. Sales to some of the former South American markets either were limited by exchange difficulties or were hampered by high tariffs to protect local fisheries. In the Philippine market, which formerly took large quantities of the U. S. product, exporters found strong competition from lower-priced sardines originating in Japan and the Union of South Africa.

CANNED MACKEREL AND ANCHOVIES: Lower catches of mackerel and anchovies in 1958 resulted in smaller amounts canned for export.

CANNED SALMON: In 1958, United Kingdom restrictions on canned salmon were removed and sales to that country rose to 7.8 million pounds.

FISH OILS: For the third successive year, exports of fish oils continued to decline from the record high of 142,286,000 pounds in 1955. These exports have been mainly menhaden oil. Over half the 1958 exports of 94,043,000 pounds was shipped to West Germany and the Netherlands for use in margarine.

Virginia

FISHERIES LABORATORY AWARDED GRANT FOR TEACHER TRAINING: A grant to conduct a research participation program for teacher training this summer was awarded by the National Science Foundation to the Virginia Fisheries Laboratory at Gloucester Point. It is the only marine laboratory in the United States to receive a grant from that Foundation for a course of this nature, according to a March 11 announcement by the Director of the Laboratory.

The purpose of the training program is to stimulate interest in marine biology by giving research experience and instruction to teachers of biology in high schools and small colleges at an active center of marine research. "Teachers who are

aware of career opportunities in marine science and who understand the educational requirements can perform a valuable service to their country by guiding promising candidates into this growing profession," the Laboratory's Director states. Those registered in the course will be required to conduct simple research projects under competent scientists at the Laboratory and will observe methods and techniques of marine research. Furthermore, they will become familiar through lectures, laboratory experiments, and field trips with local salt-water animals and plants.

The Information Officer for the Virginia Laboratory is director of the program and the Head of the Department of Biology and Geology, Texas Christian University, will be the instructor. The course will run from June 22 to July 31.

The grant by the Foundation makes it possible for teachers to further their education and broaden their experiences by giving them up to $75 a week, plus allowances for travel and dependents. Only 12 teachers can be selected for the program this year because of limited working space at the Laboratory. They will be chosen according to their previous scholastic records, the number of pupils under their supervision, and their services to the teaching profession.

Washington

UNIVERSITY OF WASHINGTON AWARDED GRANT FOR FISHERIES RESEARCH: Two fisheries research grants that will total nearly $120,000 over a three-year period have been received from the National Institutes of Health by the College of Fisheries at the University of Washington, Seattle.

One project is to study bacterial standards of precooked frozen seafoods under an initial grant of $28,000 for the first year's work. Grants of $23,000 will be allocated annually for two subsequent years. The other project, scheduled at $15,000 annually for three years, is for research on marine bacteria.

In the frozen seafood project, bacterial analyses of the products at various stages of processing and marketing will be made as a safeguard against the possibility of food poisoning.

In the marine bacteria research, a type culture collection of bacteria from marine plants and animals will be established and a logical system for their classification developed. Because marine bacteria thrive in a cold environment, this project may provide important information that could be applied to the storage and preservation of blood, in addition to the significance to fisheries.

Wholesale Prices, March 1959

Wholesale prices for selected edible fishery products in mid-March 1959 were down 4.1 percent from the preceding month due primarily to lower prices for fresh drawn haddock, and fresh and frozen fillets. As compared to the same month in 1958, the March 1959 edible fish and shellfish (fresh, frozen, and canned) wholesale price index (128.2 percent of the 1947-49 average) was up about 2.7 percent due to higher prices for fresh and frozen drawn and dressed salt-water products, fresh haddock fillets, fresh-water yellow pike, and canned Maine sardines. Fresh and frozen shrimp were lower in March this year as compared with the same month of 1958.

The March 1959 price index for the drawn, dressed, and whole finfish was lower by 10.1 percent from the preceding month because of a sharp drop in drawn fresh haddock prices (down 30.1 percent) and more moderate declines in the wholesale prices for frozen red king salmon, drawn whitefish, and yellow pike. The only increase in wholesale fish

prices from February to March 1959 was a slight rise in frozen halibut prices. As compared with March 1958, the subgroup index for this March was higher by 21.5 percent due to higher prices for all the items in the subgroup except Lake Superior whitefish.

The fresh processed fish and shellfish subgroup index from February to March this year was lower by 3.5 percent due to declines in wholesale prices for fresh haddock fillets (down 21.5 percent), fresh shrimp (down 1.0 percent), and fresh shucked oysters (down 2.1 percent). The subgroup index in March this year when compared with the same month in 1958 was higher by about 1.0 percent. Higher prices for fresh haddock fillets (up 35.7 percent) and oysters (up 4.5 percent) more than offset a drop of 5.2 percent in fresh shrimp prices at New York City.

Due to lower frozen shrimp prices at Chicago and declines of 1-2 cents a pound in prices for the three subgroup frozen fillet items at Boston, the March 1959 index for frozen processed fish fillets and shellfish declined 2.6 percent from the preceding month. From March 1958 to March this year the wholesale price index fell 5.0 percent because of declines of 8.3 percent in frozen shrimp prices at Chicago and a slight drop (1.3 percent) in the price for frozen haddock fillets at Boston. The other fillet items in this subgroup were unchanged this March from a year ago.

From February to March 1959 the over-all canned fish subgroup index was unchanged. Tuna canning continued at a record pace in March this year; however, the excellent Lenten demand helped to keep packers' inventories at a manageable level. As compared with the same month of 1958, prices for the selected canned fish products this March were lower by 3.0 percent. Higher Maine sardine prices (up 17.8 percent) were offset by 23.6-percent lower California sardine prices and slightly lower prices for canned tuna and salmon.

Table 1 - Wholesale Average Prices and Indexes for Edible Fish and Shellfish, March 1959 With Comparisons

Group, Subgroup, and Item Specification	Point of Pricing	Unit	Avg. Prices1/ ($)		Indexes (1947-49=100)			
			Mar. 1959	Feb. 1959	Mar. 1959	Feb. 1959	Jan. 1959	Mar. 1958
ALL FISH & SHELLFISH (Fresh, Frozen, & Canned)					128.2	133.7	135.4	124.8
Fresh & Frozen Fishery Products:					148.8	157.9	160.6	141.1
Drawn, Dressed, or Whole Finfish:					153.6	170.9	174.1	126.4
Haddock, lge., offshore, drawn, fresh	Boston	lb.	.15	.21	149.2	212.8	232.9	91.2
Halibut, West., 20/80 lbs., drsd., fresh or froz.	New York	lb.	.33	.33	103.1	102.6	103.7	99.0
Salmon, king, lge. & med., drsd., fresh or froz.	New York	lb.	.75	.77	168.5	173.0	174.1	142.4
Whitefish, L. Superior, drawn, fresh	Chicago	lb.	.67	.77	166.1	190.9	166.1	185.9
Whitefish, L. Erie pound or gill net, rnd., fresh	New York	lb.	.80	.80	161.8	161.8	146.6	161.8
Yellow pike, L. Michigan & Huron, rnd., fresh	New York	lb.	.73	.74	170.0	173.5	153.6	158.3
Processed, Fresh (Fish & Shellfish):					145.8	151.1	154.2	144.6
Fillets, haddock, sml., skins on, 20-lb. tins	Boston	lb.	.48	.61	161.6	205.9	214.4	119.1
Shrimp, lge. (26-30 count), headless, fresh	New York	lb.	.91	.92	143.8	145.3	150.1	151.7
Oysters, shucked, standards	Norfolk	gal.	5.88	6.00	145.4	148.5	148.5	139.2
Processed, Frozen (Fish & Shellfish):					133.8	137.4	138.9	140.9
Fillets: Flounder, skinless, 1-lb. pkg.	Boston	lb.	.41	.42	106.0	108.6	108.6	106.0
Haddock, sml., skins on, 1-lb. pkg.	Boston	lb.	.40	.42	124.0	131.8	128.7	125.6
Ocean perch, skins on, 1-lb. pkg.	Boston	lb.	.30	.31	118.8	124.9	124.9	118.8
Shrimp, lge. (26-30 count), 5-lb. pkg.	Chicago	lb.	.86	.87	132.3	133.8	137.7	144.3
Canned Fishery Products:					98.8	98.8	98.9	101.8
Salmon, pink, No. 1 tall (16 oz.), 48 cans/cs.	Seattle	cs.	22.25	22.25	116.1	116.1	114.8	120.0
Tuna, lt. meat, chunk, No. 1/2 tuna (6-1/2 oz.), 48 cans/cs.	Los Angeles	cs.	11.00	11.00	79.3	79.3	79.3	82.9
Sardines, Calif., tom. pack, No. 1 oval (15 oz.), 48 cans/cs.	Los Angeles	cs.	7.40	7.38	86.9	86.6	91.0	113.8
Sardines, Maine, keyless oil, No. 1/4 drawn (3-3/4 oz.), 100 cans/cs.	New York	cs.	8.22	8.22	87.5	87.5	90.1	74.3

1/ Represent average prices for one day (Monday or Tuesday) during the week in which the 15th of the month occurs. These prices are published as indicators of movement and not necessarily absolute level. Daily Market News Service "Fishery Products Reports" should be referred to for actual prices.

International

BALTIC SEA

CONVENTION PLANNED FOR PROTECTION OF FISH:

Negotiations were still in progress towards the end of February 1959 between the countries bordering on the Baltic Sea concerning measures to provide protection against indiscriminate salmon fishing practices in the Baltic. These negotiations are expected to lead to the signing of a convention providing for protection of cod, herring, and flatfish as well as salmon.

Press reports indicate that the fishery experts of the negotiating Baltic countries are fully agreed on mesh-sizes of fishing nets as well as other fishing gear to be used in the Baltic. They appear to be likewise agreed on prohibition of the use of sunken lines strung with artificial bait in salmon fishing during certain periods of the year.

Research has revealed that large areas in the Baltic where the cod start to spawn are oversaturated with oxygen, while in other sections of the Baltic different hydrological conditions prevail. As a result, landings of Baltic cod are presently considerably smaller than some 10 to 15 years ago and a further decline in spawning density is feared in future years unless the Baltic waters improve. Moreover, the flatfish population of the Baltic is believed to be currently rather sparse. (United States Embassy report from Stockholm, February 27, 1959.)

EUROPEAN COMMON MARKET

COMMON MARKET CAUSES SOME CONCERN IN FISHERY CIRCLES:

The European Common Market--consisting of France, Italy, West Germany, Belgium, Netherlands, and Luxembourg--started to function on January 1, 1959. The six countries began by effecting a 10-percent reduction in customs tariffs and a 20-percent increase in import quotas between member nations. Spain, at least for the present, is on the margin of this organization. England's position will also be marginal when the Zone of Free Commerce becomes impractical. In both England and Spain, and in Scandinavian countries, the formation of the European Common Market has caused some apprehension.

In fishing industry circles of the European Common Market nations there is some alarm about the possible effects of the new market. The French fishing industry is especially concerned about the future of some of their export products such as fresh fish, salted herring, and canned sardines and tuna. Since entry into the Common Market was preceded by measures which liberalized trade, France fears that it will have to compete with the fishery products exports of other member countries.

French fishing vessel owners fear that the domestic market will be invaded by products from the five other Common Market nations due to the new exchange rates and the reduced tariffs. But this fear is considered to be unfounded. With the exception of West Germany, the other Common Market countries do not have the potential production and volume to seriously disturb the present level of France's domestic prices for fishery products.

On the other hand, the demand for fishery products is generally inelastic and little is needed to produce changes in its stability. Despite this, it is necessary to hope for the best (Industrias Pesqueras, Vigo, Spain, January 15, 1959).

International (Contd.):

FOOD AND AGRICULTURE ORGANIZATION

INTERNATIONAL MEETING OF NORTH ATLANTIC FISHERY STATISTICS EXPERTS:

An international meeting of experts on fishery statistics in the North Atlantic area is to be held in Edinburgh in September 1959 at the invitation of the United Kingdom Government.

The Conference is being convened by the Food and Agriculture Organization (FAO) of the United Nations in cooperation with the International Commission for the Northwest Atlantic Fisheries and the International Council for the Exploration of the Sea.

Governments concerned with the North Atlantic fisheries have been invited to nominate experts directly concerned with collecting, analyzing, and publishing statistics on the fishing industries and trades of their countries. The Scottish Home Department will act as hosts to the delegates. About 50 or 60 experts are expected to attend the Conference.

The meeting will be of interest not only to officials but also to biologists, economists, and fishing industry executives.

It is hoped that delegates will be able to identify the main difficulties encountered in providing statistical data for the use of Governments, international agencies, and the fishing industry and will indicate the action to be taken to eliminate or reduce such difficulties.

Fishery statisticians are faced with an ever-growing demand for more numerous and more detailed statistical data and will attempt at the Conference to work out with the users further means of simplifying their task. It is also hoped that delegates will be able to say how to standardize both national and international fishery statistics to make them more useful.

In addition to holding plenary sessions, the Conference will work through two committees. The first will deal with fish catching statistics and the second will be concerned with fish processing, distribution, and consumption statistics. Working and background papers for the meeting are being prepared by the sponsoring bodies and by various participating countries.

This will be the second international meeting on fishery statistics. The first was organized by FAO and held in Copenhagen in May 1952. The Edinburgh meeting will be held in the Government Buildings at Saughton and will carry forward international cooperation in fishery statistics which was stimulated by the Copenhagen meeting. It will start on September 22, 1959, and is expected to end on Wednesday, September 30, but, if desirable, the meeting will be extended to Friday, October 2.

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SECOND WORLD FISHING BOAT CONGRESS MAY DETERMINE FUTURE OF FISHING BOAT DESIGN:

One of the main problems facing the fishing industry of the world is to determine design and construction criteria which will ensure that fishing boats will be both safe and sea-kindly and, at the same time, operate efficiently.

A function of the Second World Fishing Boat Congress is to focus attention on this question and a great many of the papers presented deal with such problems as stability and sea-kindliness. In an interview at the Rome headquarters of the Food and Agriculture Organization (FAO), where the Congress was scheduled to meet April 5-10, 1959, the Chief of the Fishing Boat Section, Fisheries Division, FAO, and Secretary of the Congress pointed out:

International (Contd.):

The Congress makes a very important contribution towards solving the problem of making fishing boats safer at sea and increasing their efficiency. In many ways the problem involves contradictions. For example, a vessel with a long period of roll is much more comfortable for the crew and provides easier working conditions which contribute to efficiency in operation, but it is in more danger of capsizing than a vessel with a short period. Naval architects and boat builders throughout the world need a simple method of establishing the stability of fishing boats on the drawing board but we have not, so far, acquired sufficient data for this purpose. However, judging from some of the papers contributed to the Congress, we are approaching a point where universally-accepted methods may be proposed.

For example, there is a mass of information from Japan. In fact, we can say that the Japanese have opened up their books on design of fishing boats and are making available data which most other nations would regard as secret, if any of them had collected such information! These Japanese papers give a vast number of figures on the performance of many vessels so that we have a good picture on their stability, distribution of weight in the hull, center of gravity, speed, performance, and behavior at sea.

Among other contributions, one from Germany proposes a simple diagram to show the period of roll in relation to the beam of the ship. It states that both short and too long rolls are bad and proposes a minimum and maximum period of roll, criteria which may be applicable to any type of fishing boat in any part of the world. Naval architects in other countries are invited to check these proposals by carrying out actual measurements at sea.

Similarly, there are papers dealing with pitching and the question of the distribution of weights in the hull. There is much conflicting opinion about this, some experts supporting the theory that the weights should be concentrated amidships and others holding that these weights should be distributed throughout the length of the hull. There is also the important question as to whether hulls should be fine or full-ended and the extent to which such designs improve the comfort of the crews and enable the boat to continue fishing in high winds and rough seas.

It is interesting to observe that naval architects and others in the United States, United Kingdom, Japan, and many European countries, who are investigating this problem of stability with the hope of establishing criteria which will enable the stability of a boat to be predicted while on the drawing board, are approaching the problem from many different angles. Yet it appears that they are coming to the same conclusions and these seem to be in line with the criteria proposed in 1939 by Professor A. Rahola of Finland. It is a rather ironic situation to find that valid criteria had been proposed 20 years ago and that all the work in recent years seems to confirm this.

One of the most controversial papers at the Congress by an American naval architect proposes a new way of determining scantlings of wooden vessels. At the present time, the scantlings required by classification societies and by governments are largely based on the rule-of-thumb methods of the past. In many cases, the rules call for scantlings which are far thicker and heavier than is really necessary, and do not take into consideration modern scientific and technical knowledge nor the improved methods of construction. A much lighter standard of scantlings which would considerably lower wooden boat construction costs, perhaps by as much as 10 percent, is proposed. The proposals were based on a selected number of ships which, with lighter scantlings, have operated successfully for a number of years. It is hoped that this will lead ultimately to a revision of scantling requirements by classification societies.

Among other interesting papers are some dealing with outboard engines and with surf boats. American manufacturers of outboards have in the past chiefly concentrated on supplying the speed and pleasure boat market but they are now showing a good deal more interest in the fishing boat market because European makers are invading it, much as they have invaded the small car field. The fishing boat market is a particularly promising outlet, especially in the underdeveloped countries where the first step towards mechanization of fishing boats is often the installation of outboard engines. An example of this development is to be found in Uganda where, in the past six years, the lake fishermen have installed more than 1,200 outboards in their craft and these, allied with the introduction of nylon nets, have helped to double the fish catch from the lakes--from about 24,000 to more than 48,000 metric tons a year. Similar impressive examples of the expanding use of outboard engines can be found in many countries of Africa, Asia, and Latin America.

One of FAO's naval architects presents a paper which sums up FAO's work on surf boats during the past seven years. As a result of this work, prototype surf boats, 24-foot over-all, have been built and tested and have been found capable of passing through 5- and 6-foot surf. The architects are now concentrating on the design of a boat which will be cheaper to build than the ordinary fishing boat in size and will be suitable for using as a surf boat launched from, and landed on, the open beach or for operating from a fishing harbour.

The First International Fishing Boat Congress led to a widening understanding of fishing boat design and construction. It brought naval architects into the fishing boat business, drew attention to the problems they were faced with in the business, told them what had been done to date, and pointed out what remained to be done.

Since 1953 we have made a great deal of progress in hull design and construction and there have also been many other technical advances. The Second Congress adds appreciably to our knowledge of these latest developments, including the progress made in design and construction of stern trawlers, whalers, and factory ships. It also points to the future trends in fishing boat design and construction, including the use of atomic power for the factory-type fishing vessel.

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International (Contd.):

SECOND WORLD FISHING BOAT CONGRESS RECEIVES ABOUT 50 PAPERS:

For the Second World Fishing Boat Congress scheduled in Rome, Italy, April 5-10, 1959, about 50 papers on various aspects of fishing vessels had been received as of mid-March. The meeting is sponsored by the Food and Agriculture Organization (FAO).

Under the general subject of Tactics, a number of papers were submitted on deck design and equipment for drift-netting, gill-net fishing, long-line fishing, pole-and-line fishing, and trawling; also a paper on centralized control of trawlers.

For the topic of Construction, papers were listed on suggested standard scantlings; glass-reinforced plastic hulls; care of the catch; engineering and architecture of the fish hold; icing versus freezing; propulsion engines for fishing boats; steam versus Diesel; propulsion systems for motor trawlers; recent trawlers fitted with multiple-reduction gears; device for raising and lowering propellers; an analysis of dimensions, weights, and costs.

For the topic of Sea Behavior, papers were presented on hull form design of fishing boats; model tests of some fishing launches; an advanced hull and propeller design; loads imposed by trawling gear; new perspectives in sea behavior; behavior of trawlers at sea; shape of Dutch coastal fishing boats; trawler forms with bulbous bows; tests of fishing boat models in waves; notes on stability; transverse stability of tuna clippers; a method to determine freeboard in relation to stability; safety from capsizing; and causes of accidents.

Under the general topic of Productivity, the papers covered commercial outboard fishing craft; traditional Japanese small fishing craft; design and mass production of shrimp trawlers; development of a trawler of unorthodox design; postwar Dutch fishing fleet; design studies for stern trawlers; Diesel whale catcher; modern refrigerated factory-ships in Japan; and choice of boat type and size for Polish deep-sea fisheries.

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INTERNATIONAL MEETING ON FISHERY COOPERATIVES HELD IN NAPLES:

A technical meeting on Fishery Cooperatives, organized by the Food and Agriculture Organization (FAO), Rome, in association with the International Labor Office, Geneva, was held at Naples, Italy, May 12-21, 1959.

Governments and intergovernmental organizations interested in fishery cooperatives were invited to send representatives and experts to exchange information, experience, and views on the function, organization, and management of fishery cooperatives.

"As we have found at FAO, there is a strong and growing interest in fishery cooperatives in many parts of the world," stated the technical secretary of the meeting. "For this reason we have been asked for a good deal of help and information in connection with fishery cooperatives, but I must stress that we are primarily concerned with them only to the extent that they may provide a practicable means of increasing efficiency in fish production and trade in some areas where there is an expressed desire for such types of undertaking.

"Some very successful fishery cooperatives are to be found in highly-developed fishing countries, such as Canada, Sweden, Norway, Japan, and several others. But there are differences of purpose and approach and there is a wide range of working methods among these successful organizations.

"In most cases little is known about them outside the countries concerned. The primary purpose of the Naples meeting is to enable experts to make a comprehensive review of modern organization and practice in fisheries cooperatives, exchange information, experience and views and, we hope, come to conclusions which will point the way to the best means of promoting and developing cooperative undertakings to meet conditions in different countries."

Many governments and other authorities are in fact fostering the formation of fishermen's cooperatives with the aim of improving the fishermen's social and

International (Contd.):

economic welfare as well as setting up an efficient commercial organization. This is especially true in those fisheries which are small-scale and widely dispersed and where existing commercial channels are too narrow and restrictive to offer any incentives to the fishermen.

The meeting discussed cooperative and private enterprise in fishing, fishery cooperatives and governments, cooperative education in fisheries, management of cooperatives, and the future of cooperatives.

The selection of Naples, at the invitation of the Italian Government, as the site for the meeting was particularly appropriate because of the traditional association of the port with the fishing industry. There are some 20 fishermen's cooperatives in Naples and the immediate vicinity.

INTER-AMERICAN FOOD CONGRESS

ANNUAL MEETING IN MIAMI BEACH: Industry food technologists from the United States and U. S. Department of Agriculture officials will present a bilingual program, through the medium of

simultaneous translation, for Latin American Government officials, food industry representatives and their guests from 17 countries at the Annual Inter-American Food Congress to be held at the Carillon Hotel, Miami Beach, Fla., June 9-13, 1959. The Congress is sponsored by the Inter-American Food Institute, a nonprofit corporation designed to assist the Latin American food industry.

The purpose of the Institute is to promote, through a scientific, nonpolitical effort, effective cooperation and exchange of ideas and information among the peoples of South America, Central America, and countries of the Caribbean Area, relative to technical and scientific advances pertaining to the production, processing, packaging, quality control, and marketing of food and food products. The Institute is at present governed by an executive committee consisting of six men from United States industry and six from Central and South America.

Latin Americans from every type of food industry will be in Miami Beach to learn our latest advances in bio-chemistry, chemistry, microbiology, enzymology , and the nutritional aspects of meat, poultry, fish, fruit, vegetables, cereal, confections, and dairy products, as well as processing and packaging methods, quality control, grading, and marketing. Special sections will be devoted to each of these subjects.

Major manufacturers in the food field will exhibit their products at the Congress for the inspection of the Latin Americans who will attend.

Because of the desire of the United States Government to cooperate with the Latin Americas to improve their standards of living, and because of the tremendous investment of private United States capital (over $9 billion in 1958), the Institute is certain that American industry will find ready markets for its products in Latin America.

INTERNATIONAL PACIFIC SALMON COMMISSION

SOCKEYE AND PINK SALMON REGULATIONS FOR 1959: Regulations for 1959 sockeye and pink salmon fishing have been approved by the International Pacific Salmon Fisheries Commission for Convention waters off the west coast of the United States and Canada, according to a February 5, 1959, news release from the Commission. The original suggestions for regulatory control were submitted to the industry at a meeting held on December 16, 1958, and again on January 21, 1959. Numerous recommendations were presented by the official representatives of the industry on the Commission's Advisory Board.

United States Section: One recommendation was that the westerly limit to net fishing in the Strait of Juan de Fuca be changed easterly from the Bonilla-Tatoosh line to the Port Angeles-William Head line to protect immature coho or silver salmon and to protect from overfishing the pink salmon destined for Puget Sound streams outside Convention waters.

International (Contd.):

In considering this recommendation in respect to coho or silver salmon the Commission was cognizant: (a) That coho or silver salmon are not included within the terms of reference of the Sockeye Salmon Fisheries Convention. (b) That the taking of coho or silver salmon in the Strait of Juan de Fuca has been under specific discussion in investigation by the United States and Canadian Governments since February 1957. (c) That the Bonilla-Tatoosh line has been declared a "Provisional Line" by the Governments concerned subject to reconsideration at a second International Conference on Coordination of Fisheries Regulations between Canada and the United States scheduled for March of this year.

The Commission pointed out it could not take any action in advance of an official decision of the Governments presently concerned with the problem and its solution.

In considering the above recommendation further the Commission pointed out that Article VI of the Pink Salmon Protocol recognizes the need of extensive biological knowledge concerning the pink salmon stocks concerned by requiring that "the Parties shall conduct a coordinated investigation of pink salmon stocks which enter Convention waters for the purpose of determining the migratory movements of such stocks." A Coordinating Committee was established in 1957 consisting of representatives from the State of Washington Department of Fisheries, the Department of Fisheries of Canada, the Fisheries Research Board of Canada, and the International Pacific Salmon Fisheries Commission. This Committee has been preparing a comprehensive plan of investigation to be conducted this year for the purpose of determining the:

(a) Destination, migration routes, times of passage, catches, and exploitation rates of the pink salmon stocks moving through fishing areas adjacent to Convention waters but migrating to streams located in Convention waters.

(b) Destination, migration routes, times of passage, catches, and exploitation rates in Convention waters of pink salmon passing through Convention waters en route to streams in Outside Areas.

The operation of the coordinated program in 1959 is expected to cost $150,000 and will be mutually undertaken and financed by the four agencies above referred to. The Committee is of the opinion that the results will be of great value in delineating the size of each population and the effects of each individual fishery operating upon it during its passage from the sea to its respective spawning ground.

The sockeye populations fished in Convention waters are practically all destined for the Fraser River but there are many pink salmon stocks destined for streams lying both north and south of the Fraser River both within and outside of Convention waters. The possibility exists that these populations have a variable ability to reproduce themselves as a result of both natural and artificial variations in environment. This possibility necessitates the need for detailed information not yet available in order to have the maximum flexibility in localized regulation to properly protect as many stocks as possible while still allowing a maximum harvest of all the stocks. While awaiting acquisition of the necessary knowledge by the investigations conducted under the auspices of the Coordinating Committee, the Commission in its opinion has established a policy of regulatory control sufficiently restrictive to provide protection to practically all, if not all, of the stocks of pink salmon available to the fishery in Convention waters. It has emphasized at both of the meetings with the industry that any variations from normal in the size of the 1959 run of pink salmon will result in additional regulatory restrictions in all of the pertinent fishing areas of Convention waters.

It is important to point out that the responsibility of either government or of this Commission has not yet been clearly defined in the case of salmon populations being subjected to a fishery either before or after entering Convention waters.

The following is a digest of the recommendations approved by the Commission as regulations for sockeye and pink salmon fishing in Convention waters for 1959.

All United States Convention Waters: June 21 to July 19--closed. July 19 to August 16--purse seines and reef nets open daily 4:00 a.m. to 8:00 p.m. P.S.T. Monday through Wednesday; gill nets open daily 6:00 p.m. to 8:00 a.m. Monday afternoon to Thursday morning. August 16 to September 27--purse seines and reef nets open daily 4:00 a.m. to 8:00 p.m. Monday through Thursday; gill nets open daily 6:00 pp.m. to 8:00 a.m. Sunday afternoon to Thursday morning. Waters westerly of a line projected from the Iwersen dock on Point Roberts in a straight line towards the Active Pass light to a point where said line intersects the International Boundary--September 6 to September 27, closed.

Canadian Convention Waters: West of William Head - Angeles Point line (final determination on daily opening and closing hours in this area will be held in abeyance pending possible receipt of a mutually-approved recommendation from the respective fishermen): June 21 to 5:00 p.m. July 19--closed. July 19 to August 16--purse seines open daily 5:00 a.m. to 5:00 p.m. Monday through Wednesday; gill nets open daily 5:00 p.m. to 5:00 a.m. Sunday afternoon to Wednesday morning; traps open 5:00 a.m. Monday to 5:00 a.m. Thursday. August 16 to August 30--purse seines open daily 5:00 a.m. to 5:00 p.m. Monday through Thursday; gill nets open daily 5:00 p.m. to 5:00 a.m. Sunday afternoon to Thursday morning; traps open 5:00 a.m. Monday to 5:00 a.m. Friday. August 30 to September 20--purse seines open daily 5:00 a.m. to 5:00 p.m. Monday through Friday; gill nets open daily 5:00 p.m. to 5:00 a.m. Sunday afternoon to Friday morning; traps open 5:00 a.m. Monday to 5:00 a.m. Saturday.

East of William Head - Angeles Point line: June 21 to 7:00 a.m. July 20--closed except for spring salmon nets under regulation by the Department of Fisheries but having a mesh of not less than 8 inches for linen nets and 8-1/2 inches for nylon nets. July 20 to September 10--open 7:00 a.m. Monday to 7:00 a.m. Thursday.

Easterly of a line from Point Grey to North Arm Jetty to Sand Heads light to Canoe Pass buoy thence on a direct line towards the West Point Roberts light to the International Boundary: Closed 7:00 a.m. September 10 to 7:00 a.m. September 21. Open 7:00 a.m. September 21 to 7:00 a.m. September 24. Closed 7:00 a.m. September 24 to October 12 except for spring salmon nets under regulation by the Department of Fisheries but having a mesh of not less than 9 inches for linen nets and 9-1/2 inches for nylon nets.

Westerly of a line from Point Grey to North Arm Jetty to Sand Heads light to Canoe Pass buoy thence on a direct line towards the West Point Roberts light to the International Boundary including Areas 17, 18 and portion of Area 19: Closed 7:00 a.m. September 10 to 7:00 a.m. September 14. Open 7:00 a.m. September 14 to 7:00 a.m. September 18. Closed 7:00 a.m. September 18 to 7:00 a.m. September 21. Open 7:00 a.m. September 21 to 7:00 a.m. September 25. Closed 7:00 a.m. September 25 to October 12 except for spring salmon nets under regulation by the Department of Fisheries but having a mesh of not less than 9 inches for linen nets and 9-1/2 inches for nylon nets.

Note: These are the recommendations by the Commission which are usually adopted and issued by Canada and the United States without change.

INTERNATIONAL WHALING COMMISSION

AMENDMENT TO CONVENTION RATIFIED BY PANAMA:

The protocol amending the International Whaling Convention of 1946, done at Washington, November 19, 1956, was ratified by Panama on February 9, 1959. The protocol will not be in force until the required number of countries complete ratification.

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International (Contd.):

JAPAN TO WITHDRAW FROM CONVENTION EFFECTIVE JUNE 30, 1959:

Japan notified the International Whaling Commission on February 6, 1959, of its intention to withdraw from the International Whaling Convention (signed in Washington, December 2, 1946, and entered into force November 10, 1948) and Schedule of Whaling Regulations on June 30, 1959.

MARINE BIOLOGY STUDIES INCLUDED IN 1958/59 ANTARCTICA PROGRAM

The Committee on Polar Research of the U. S. National Academy of Sciences and its panel on Biological and Medical Sciences, in cooperation with the National Science Foundation, has prepared a broad program as part of the continuing United States scientific research in Antarctic regions. Australia, Great Britain, Argentina, and other nations are also supporting continuation of biological programs in the south polar regions.

At the U. S. Naval Air Facility, on Ross Island in McMurdo Sound, a permanent laboratory will be installed by 1959 to support field studies in biology, medicine and other life sciences in the summer season.

In December 1958 marine biology studies were being conducted by six investigators working partly from ships and partly from the laboratory at McMurdo. A study of the food cycle of marine fauna was being made at Hallet Station and at McMurdo, to be continued by invitation from the New Zealand Oceanographic Institute, aboard the HMNZS Endeavour during a cruise along the Antarctic convergence zone and in the Ross Sea. The ecology of inshore marine invertebrates is being studied at McMurdo. Marine biologists accompanied the USS Glacier through the Ross Sea to McMurdo Sound, and the USS Edisto to International Geophysical Year Ellsworth Station on the Weddell Sea, for studies of the systematics of Antarctic fishes and other marine biological observations. Physiological properties of blood and of anatomical adaptations to feeding habits and habitat is to receive particular attention. (IGY Bulletin No. 18, December 1958.)

MARINE OILS

ESTIMATED WORLD PRODUCTION IN 1959:

World production of marine oils in 1959 should be slightly higher than the 1958 output. Whale oil production is expected to be up as a result of an increase to 15,000 in the blue-whale units to be taken in the Antarctic during the 1959 pelagic season, up 500 from 1958. The future of Antarctic whaling is uncertain as several countries have conditionally withdrawn from the International Whaling Commission because of failure of the participating countries to agree on individual country division of the catch limit.

Table 1 - Estimated World Production of Marine Oils (averages 1935-39 and 1950-54, annual 1952-58, and forecast 1959 1/)

Type	Forecast 1959 2/	1958 3/	1957	1956	1955	1954	1953	1953	Average 1950-54	Average 1935-39
	(1,000 Short Tons)									
Whale	450	430	440	425	420	455	420	460	545	440
Sperm whale	110	115	100	120	100	75	55	85	30	80
Fish (including liver)	450	440	455	515	530	515	455	455	480	465
Total	1,010	985	995	1,060	1,050	1,045	930	1,000	1,055	985

1/ Beginning with 1950 the years indicated are those in which the predominant share of a given oil was produced.
2/ Forecasts for 1959 oils are based on the assumption that normal weather and fishing conditions will prevail during the coming year.
3/ Preliminary.
Note: Compiled from official and other sources.

International (Contd.):

Sperm oil production in 1959 is not expected to equal that of 1958 primarily because of the low prices received for the 1958 output. The 1958 output was up sharply from that of 1957. Relatively high prices in 1957 probably stimulated the increase in sperm whaling in the Antarctic during 1957/58 pelagic season.

World fish oil production in 1959 is forecast slightly above 1958. The Norwegian output should be up somewhat from last year when unfavorable weather and difficulty in locating fish reduced production approximately one-half.

NORTH PACIFIC SALMON FISHERIES CATCH, 1956-57

Japan and Russia in that order, are the leading two salmon producing nations in the Pacific. This was revealed in a meeting of the International North Pacific Fisheries Commission in Tokyo in 1958 when the U.S.S.R. presented to the Commission its salmon catch statistics for the years 1956 and 1957. When combined with previously available data from Japan, the United States, and Canada, a comprehensive picture of the North Pacific salmon fisheries is presented.

Japan caught a total of 743 million pounds of salmon in the two years; Russia 680.5 million pounds; the United States 589.5 million pounds; and Canada 252.5 million pounds. Only the United States and Canada fish for the king salmon, which originate on the United States side of the Pacific. The most abundant salmon in the two years was pink.

Table 1 - North Pacific Salmon Fisheries Catch by Countries, 1956-57

Country	Sockeye	Pink	Chum	Silver	King	Total
	(Million Pounds)					
1957:						
Canada	15.7	57.3	27.2	22.8	12.7	135.7
United States	67.5	71.6	68.9	26.8	30.5	265.3
Japan	93.8	214.5	98.2	2.0	0.2	408.7
U.S.S.R.	8.2	234.6	70.5	11.9	1.9	327.1
Total	185.2	578.0	264.8	63.5	45.3	1,136.8
1956:						
Canada	21.5	29.0	27.4	25.2	13.7	116.8
United States	94.3	102.2	59.9	29.5	38.3	324.2
Japan	43.8	158.4	111.3	19.9	0.9	334.3
U.S.S.R.	12.6	159.1	170.3	9.2	2.2	353.4
Total	172.2	448.7	368.9	83.8	55.1	1,128.7

NORTHWEST PACIFIC FISHERIES COMMISSION

PROGRESS ON 1959 NEGOTIATIONS BETWEEN JAPAN AND RUSSIA:

The biological subcommittee of the Japanese-Soviet Northwest Pacific Fisheries Commission by early March 1959 had completed its consideration of the condition of the Far Eastern North Pacific salmon populations. The deliberations were not made public in detail, but press reports revealed differences between the views of Japanese and Soviet scientists on the state of the salmon resources and the effect of the high-seas fishery on salmon conservation.

The regular annual meeting of the Japan-Soviet Commission for Northwest Pacific Fisheries opened at Tokyo on January 12, 1959. The purpose of the meeting is to consider the condition of the salmon, herring, and king crab resources in the Pacific Ocean north of 45° N. latitude and west of 175° W. longitude and to decide what limitations of catch and fishing practices are necessary for the conservation of these resources. The most important point of the discussion is the salmon catch that the Japanese are to be allowed to take, and the conditions under which it is to be taken.

As all meetings are closed and there are no observers from third countries, the only information available on the discussions, aside from occasional communiques issued by the Commission, is that found in the Japanese press. The press, however, is very active in gathering and reporting detailed information on these meetings.

Salmon and King Crab Catches: The first substantial information to come from the conference was the report of salmon and king crab catches by Japan and U.S.S.R. in the 1958 season.

Japan (Contd.):

Japan reported a total catch of 181,854 metric tons of all species of salmon, broken down as follows: within the treaty area, north of 45° N. latitude, the Japanese took 110,145 tons (145 tons over the quota set by the Commission), of which mothership fleets took 91,619 tons (24,248 red, 35,918 chum, 22,092 pink, 9,361 other salmon) and land-based gill-netters took 18,526 tons (31 red, 3,410 chum, 13,128 pink, 1,957 other salmon). South of the treaty area land-based gill-netters took 40,853 tons (1,330 red, 16,181 chum, 23,128 pink, 214 other salmon) and long-liners caught 9,875 tons (2,736 chum, 7,139 pink). Japanese coastal salmon fisheries produced 20,981 metric tons (1,747 chum; 19,234 pink).

The Soviet Union reported a total salmon catch of 73,000 metric tons, of which 13,800 tons was taken in Kamchatka. Red salmon landings were reported as 1,000 tons.

Japan's four king crab cannery factoryships in the Sea of Okhotsk caught 9,958,000 crabs and packed their planned quota of 320,000 cases. The Soviet fleets reportedly packed 340,000 cases out of a planned 480,000.

Violations by Japanese of Northwest Pacific Fishery Regulations: The second matter of importance on which the Commission took action was that of violations by Japanese fishing boats of the regulations determined by the Commission for the 1958 salmon fishing season. There has been a large number of violations of the regulations of the Japan-Soviet Northwest Pacific Fisheries Commission during the past year. (In contrast, along the Provisional Abstention Line established under the International North Pacific Fisheries Convention by the United States, Canada, and Japan, no violations by Japanese boats have been reported during the 5 years that the Convention has been in force.) It should be noted that these regulations are quite complex, involving numerous closed areas, net mesh-size limits, and the length and spacing of sets of gear. Furthermore, a large number of salmon boats operate independently in Far Eastern waters, whereas the fishing in waters nearer the Provisional Abstention Line is done by boats under the control of motherships carrying Japanese government inspectors.

It is not clear exactly how many violations were apprehended, because there may be duplication between the Japanese and Soviet figures. However, the Japanese reported 77 vessels already dealt with and another 11 still under investigation, while the Russians reported apprehending 23 vessels fishing illegally. According to Japanese sources, almost all of the violations were cases where vessels not licensed to fish salmon north of the treaty line had independently entered treaty waters. The Soviet side, on the other hand, cited principally cases where vessels attached to mothership fleets had entered closed areas, set excessive amounts of gear, set nets too close together, caught more than their quotas, or taken excessive numbers of immature fish. The Russians laid stress on the fact that in a number of cases they had obtained from the captains of the offending boats written statements that they had been ordered by the mothership operating companies to violate the Commission's regulations. The upshot of this aspect of the Commission's proceedings was passage of a resolution in which both delegations recognized that there had been violations and urged the governments to take stricter control measures.

Condition of Northwest Pacific Salmon Resources: From its third week the Commission entered upon the discussion of the condition of the salmon resources of the Far East. The "resource question" was debated in plenary sessions for about a week, after which the plenary recessed and the discussions were continued in the Scientific and Technical Subcommittee. These subcommittee proceedings first covered the general state of the resources, and then took up each species in turn, in the order of pink, chum, red, silver, and king salmon. These discussions continued until February 3, with no agreement reported on any important point.

The cases presented by the two national subcommittees with regard to the state of the salmon resources may be roughly summarized by saying that the Soviet representatives have claimed both in general and in respect to each species that the resources have declined to a dangerously low level, and that this decline has been primarily caused by the Japanese high-seas fishery, while the Japanese have maintained that it is premature to say that the resources have declined, and that even if they have, it is not from any effect of high-seas fishing.

The Russian arguments are based on conventional grounds in that they emphasize the importance of spawning escapement and the numbers of downstream migrants as indications of the condition of the salmon populations. They have claimed that escapements were generally very small in their rivers last year, and this contention has been corroborated to some extent by the reports of Japanese observers who visited the Soviet Far East last summer. The Russians base their claim that the Japanese high-seas fishery is to blame for the small runs into the coastal zones on such evidence as the high occurrence of net-marked salmon, reportedly around 20 percent in some major red salmon streams, and the large numbers of salmon bearing wounds caused by long-line hooks.

The Japanese delegation in rebuttal of the Soviet claims fundamentally has tried to establish that the point of view of the coastal nation, with its emphasis on spawning escapements and fry survival, is only half of the picture; the standpoint of the country operating on the high seas also has to be considered to get a balanced view of the state of the salmon populations. One item of evidence (see table) shows the annual combined coastal and high-seas salmon catches since 1926. They contend that these totals do not show any declining trend in recent years and that they also show that in some past years the coastal catch was at as low a level as it was in 1958. The Japanese delegation has tended to stress the size of the high-seas catch in the years of the parent runs, in predicting the abundance of fish in the coming year, rather than rely entirely on estimates based on spawning escapements. They claim that the relation between the number of spawners and the number of adult fish produced from a given spawning is by no means consistent or predictable.

Japan (Contd.):

The Japanese biologists also based a good deal of their argument on the Fujinaga Hypothesis, a double-barreled postulation worked out by the chief of the Japanese Fisheries Agency's research section. According to this hypothesis, the high-seas fishery exploits to a considerable degree resources that would otherwise be unutilized, for it postulates a very high natural mortality among fish migrating toward the spawning streams, and it also assumes that the stock of salmon available for capture in the high seas includes considerable numbers of fish originating from a large number of minor streams where the runs are not large enough to warrant exploitation by coastal fishermen.

The heavy natural mortality postulated by the Japanese is apparently to be blamed in large part on starvation and vitamin deficiency. The only concrete evidence so far publicly reported is a sample of 21 red salmon examined by Japanese scientists, who found 4 with what they considered definitely pathological symptoms and another 3 suspected cases. The Russian scientists contend in rebuttal that these "pathological symptoms" are nothing more than natural physiological changes occurring in fish approaching their spawning period. The Soviet delegation has further maintained that natural mortality cannot be reliably estimated on the basis of tag returns, and they hold that the Japanese claim that their high-seas fishery utilizes fish from minor streams which would otherwise be wasted is undocumented and unprovable.

The Japanese delegation placed considerable stress on the role of predation on salmon by fur seals, sea lions, and sharks, claiming that the catch of the Japanese fishery has only a small effect on the salmon stocks as compared with the depredations of these predators. They have estimated that the salmon eaten by fur seals during the fishing season alone may amount to 600,000 tons, and they advocate a reduction of the populations of the predators. The Russian representatives deny that there is any evidence that fur seals eat any significant quantity of salmon. Predation on salmon eggs and fry by Dolly Varden trout has also been brought up by the Japanese scientists as a factor adversely affecting the salmon stocks; they have used Russian scientific papers to document this argument.

Table 1 - Japanese and Soviet Salmon Catches in Northwest Pacific Waters, 1926-1957

Year	Japan1/	U.S.S.R.	Total	Year	Japan1/	U.S.S.R	Total
	(1,000 Metric Tons)				(1,000 Metric Tons)		
1958(planned)	110.0	120.0	-	1942	157.4	139.5	296.9
1957	149.4	150.0	299.4	1941	262.9	148.3	411.2
1956	134.5	165.7	300.2	1940	209.9	119.6	329.5
1955	163.3	172.4	335.7	1939	380.7	157.3	538.0
1954	60.1	121.6	181.7	1938	297.1	142.0	439.1
1953	32.7	190.8	223.5	1937	324.8	134.8	459.6
1952	27.4	118.1	145.5	1936	265.5	126.1	391.6
1951	10.5	251.7	262.2	1935	235.6	96.8	332.4
1950	5.2	113.6	118.8	1934	244.5	129.9	374.4
1949	4.9	263.4	268.3	1933	115.6	92.8	213.8
1948	0.4	133.8	134.2	1932	136.6	153.0	289.6
1947	2.1	221.3	223.4	1931	107.0	138.9	245.9
1946	0.4	136.2	136.6	1930	171.6	146.2	317.8
1945	5.1	158.1	163.2	1929	91.9	49.0	140.9
1944	21.7	177.6	199.3	1928	211.8	91.4	303.2
1943	187.9	202.1	390.0	1927	75.5	54.1	129.6
Contd. in Opposite Column				1926	188.7	160.3	349.0

1/ Japanese catch is total mothership and individually-operating gill-netters (in treaty waters, apparently).

The Soviet delegation claimed that pink salmon spawning escapements on the west coast of Kamchatka, in Sakhalin, and in the Amur River region have been poor. They admit that the populations of this species are not in quite such bad condition on the northern coasts of the Sea of Okhotsk and on the east coast of Kamchatka, but they conclude that on the whole the pink salmon resources of the Far East are at such a low ebb that the effect of this year's peak in the regular two-year cycle of abundance for this species is largely cancelled out. The Japanese delegation contends that because 1957 produced a large pink salmon catch, the fish can also be expected to be abundant in 1959.

The Russian representatives have claimed that the large Japanese catch, particularly of pink salmon, south of the present Japanese-Soviet treaty area is made up of fish from streams in Soviet territory, and that the conservation measures determined by the Commission are largely nullified by the existence of this unlimited Japanese fishery south of 45° N. latitude. The Japanese delegation denies that all of the fish taken outside of the treaty waters originate in Soviet streams, maintaining that Japanese boats are also taking salmon which come from rivers in Hokkaido, Canada, and Alaska.

Chum salmon, according to the Russian national section, are badly depleted all over the Far East. The discussion of this species was concentrated on the problem of the capture of immature fish, and this discussion produced one of the rare instances of agreement in the conference. Both sides agreed on a system of six stages for classifying the degree of maturation, from that at which sexes

International (Contd.):

cannot be distinguished by gross examination to the post-spawning condition. Unfortunately, they were unable to agree as to how many of these stages should be considered "immature." The Japanese biologists held that some chum salmon in the second stage, that of formation of the oocytes and the primary spermatocytes, spawn within the year and thus are to be considered mature. The Russian delegation says that as much as 50 percent of the Japanese chum catch consists of immature fish, and that the percentage of such immatures in the catch is particularly high late in the season.

With regard to pink salmon, the Soviet delegation has made a point of the unbalanced sex ratio in the Japanese catch in May, when more males than females are caught. They argue that this imbalance cuts down the efficiency of spawning, as there are not enough males on the spawning grounds to fertilize all of the eggs. The Japanese delegation says that the imbalance is corrected later in the season, and that the pink salmon which arrive at the mouths of the spawning streams show a balanced sex ratio.

The discussion of the state of the salmon populations was finished early in March and the scientific subcommittee was attempting to draft a report of its findings for the Commission's consideration.

Agenda for Balance of Commission Meeting: The next part of the agenda due to be taken up was the miscellaneous regulations restricting the salmon fisheries. This subject, like the resource question, was to be covered in a general way in plenary sessions and then turned over to a subcommittee for debate in detail. Among the major headings on this portion of the agenda are delimitation of closed areas, setting of the period during which fishing is to be permitted, examination of the feasibility of increasing the diameter of gill-net twine in order to lighten injury to fish which escape from the nets, measures to cut down damage to fish by long-line gear, special measures for conservation of red salmon, determination of the permissible proportion of immature fish in the red salmon catch, and study of the effects of predators on the salmon resources. At some point in this part of the agenda the Soviet delegation were to present their ideas on how much salmon the Japanese fishery should be allowed to take in 1959.

By early March 1959 the Commission was expected to take up herring and king crab resources and fishing regulations, control measures within the treaty area, reports of cooperation in research in 1958 and research plans for 1959, including the exchange of experts; treatment of statistics and other data, and the place and time of the next meeting.

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SHARP CUTBACK IN JAPANESE NORTHWEST PACIFIC SALMON FISHING PROPOSED BY RUSSIA: On March 7, 1959, the Soviet delegation to the Japanese-Soviet Commission on Northwest Pacific Fisheries made its first concrete proposal concerning the scale of Japanese salmon fishing operations in the 1959 season. The proposal would set up four areas within which Japanese salmon fishing would be permitted, and would close all other parts of the present treaty area. Each of the four fishing areas would have a prescribed opening and closing date.

It is estimated that the Soviet plan would reduce the area available to the Japanese salmon fleets to about 20 percent of the waters in which they were free to fish last year. Under present regulations of the Commission, the opening date for the Japanese fishery is not prescribed and the closing date is set at August 10. Last year the fleets started fishing about May 11. Under the Soviet proposal for 1959, the earliest starting date for any area would be June 1, and the latest closing would be July 31. The areas all lie between 59° N. and 45°30'N. latitude and 153° E. and 170° E. longitude. Their shoreward boundaries are 20 to 40 miles from the coast, and there are closed zones 120 to 180 miles wide between them. The southernmost of the fishing areas would be reserved for land-based fishing boats.

Unofficially it has been estimated that the Soviet plan would cutback the Japanese salmon catch within the treaty area to something like 30,000-40,000 metric tons as compared with 120,000 tons last year. The Russians have not yet made any proposals concerning the tonnage to be taken, except for the red salmon catch, which they want to limit to 10,000 tons as compared with last season's 24,000 tons. (United States Embassy, Tokyo, dispatch of March 13, 1959.)

TERRITORIAL WATERS

BRITISH-DANISH AGREEMENT ON FAROE ISLANDS FISHING LIMITS: An Exchange of Notes between the United Kingdom and Danish Governments concerning Faroese fishing limits contains the terms of an agreement which the British and Danish Governments propose to make concerning the fishing limits for the Faroe Islands.

International (Contd.):

Under the agreement British vessels will cease to fish within a belt of water broadly 6 miles from the Faroese coast. Fishing outside this belt and within 12 miles will continue in view of traditional British fishing in those waters. Exception will be made for three areas between these limits where fishing will be reserved at certain specified seasons of the year for line fishermen. This arrangement is being made in view of the exceptional dependence of the Faroese economy on fisheries and the importance of line fishing to the Faroese.

The Danish Government will undertake to treat British fishing vessels no less favorably than those of any other foreign country.

The agreement will remain in force pending a solution of the general problem of fishing limits, which it is hoped will be found at a Second World Conference on the Law of the Sea in the early spring of 1960. Failing a solution there the agreement will continue in force for three years from the date of signature with one year's notice on either side after that.

These arrangements will mean material sacrifices by the British fishing industry, for whom the waters around the Faroe Islands are an important fishing ground supplying a wide variety of quality fish. The sacrifices are being made to take account of the interests of the Faroese fishermen and in pursuance of the British desire to find reasonable and fair solutions to the problem of fishing limits in the North Atlantic area where the British fleets operate.

British editorial comment recognizes that the traditional limit of three miles has become obsolete and that the compromise on six miles may be regarded as a fair settlement even if it means some reduction of British catches which amounted to some 46,000 tons in the area in 1957. However, the suggestion is made that the United Kingdom should protect the interests of Scottish inshore fishermen by extending the British three-mile limit to six.

The Aberdeen area is especially hard hit as nearly 30 percent of the fish caught by Aberdeen trawlers in 1956-1957 was taken in the Faroes waters, according to the chairman of the Aberdeen Fishing Vessel Owners' Association. He also expressed the hope that Iceland will now follow the Faroes example. (United States Consulate report from Edinburgh, February 25, 1959.)

TUNA

UNITED STATES LIVE-BAIT FISHING METHOD ADOPTED BY OTHER COUNTRIES:

An Italian business man was due to visit the United States in March 1959 to place an order worth $560,000 for a modified type of United States tuna clipper. This boat will operate from the Canary Islands under the ownership of an Italian-Spanish combine and will fish for tuna in the South Atlantic. The catch will be taken to Genoa where it will be processed and canned.

The story behind this development goes back to 1953 when the Food and Agriculture Organization of the United Nations (FAO), Rome, organized the First International Fishing Boat Congress, with sessions held in Paris, France, and Miami, Fla. The purpose was to discuss the design and construction of fishing boats and to enable naval architects, boat builders, marine engineers, and other experts from all parts of the world to exchange their ideas, information and experience. Many prominent American naval architects and boat builders presented papers at the Congress. In fact, the many papers dealing with the United States tuna fishing industry aroused great interest and animated discussion.

This interest was not based solely on the design and construction of American tuna clippers and the method of fishing. It arose partly because of the rapidly growing importance of tuna. The world catch of tunas, bonitos, mackerels, etc., in 1938 was about 840,000 metric tons. By 1948 the industry had largely recovered from the ravages of World War II and landings had increased to more than 900,000 tons. Since then the increase has been spectacular--the statistics for 1957

International (Contd.):

show a catch exceeding 1,800,000 tons. Tuna has, of course, been for centuries a commercial fish in the Mediterranean but in recent years local supplies have not been enough to meet the demand so that imports of canned tuna, especially from Japan, have increased considerably. At the same time, this demand has led to European nations seeking to develop their tuna fishing industry. The French, for example, have built up a flourishing tuna fishery in the South Atlantic, based at Dakar, West Africa. At the time of the 1953 Congress they were trolling for tuna in home waters but, largely as a result of the United States papers, they decided to change from trolling to using live bait and poles-and-lines and extend operations to Dakar. Today, most French tuna fishing boats use the American method.

It is the success of the American tuna clippers and the French adaptation of the technique that has led the new Italian-Spanish combine to go to the United States to buy their first tuna fishing boat, a decision which is indirectly an outcome of the 1953 Congress.

Angola

REVIEW OF FISHING INDUSTRY, 1957: In spite of increased landings, the fishing industry of Angola experienced considerable difficulty in 1957. Poor management, outmoded equipment, and low-quality products are the principal reasons assigned for the continued poor condition of the industry. A drop in the prices of the two main export items (fish meal and fish oil) was a serious blow to producers. The industry as a whole suffered a financial loss and the need for Government help for the industry was becoming more obvious.

Table 1 - Angola's Production of Processed Fishery Products, 1956-1957

Product	Quantity	
	1957	1956
	(Metric Tons)	
Fish meal	85,205	77,703
Fish oil	7,209	4,658
Dried fish	24,805	27,229
Fish fertilizer	1/	2
Canned fish	1,861	1,774
Total	119,077	111,366

1/ Less than 1 metric ton.

Fish Meal: Exports of fish meal for 1957 totaled 94,000 metric tons, valued at more than 328,000 contos (US$11.4 million). This was 40,000 tons and 125,000 contos (US$4.3 million) more than in 1956. The price for fish meal had dropped from 3,695 escudos (US$128.50) in 1956 to 3,400 escudos (US$118.26) per ton f.o.b. Germany, Italy, Holland, and the United States were the principal purchasers. Purchases by the United States totaled 11,255 tons, a sharp drop from the 29,533 tons purchased in 1953.

Fish Oil: There was a 54-percent increase in the production of fish oil in 1957 (7,209 tons) over 1956. The total was still far behind the 11,416 tons produced in 1954. Exports rose from 5,000 tons to 12,000 tons and the f.o.b. price dropped from 5,700 escudos (US$198.26) to 5,200 escudos (US$180.87) a ton. Germany was the principal purchaser.

Dried Fish: Production declined by 8.9 percent in 1957, but the price increased from 4,839 escudos (US$168.13) in 1956 to 4,960 escudos (US$172.52) in 1957. The price was 145 escudos (US$5.04) per 30-kilo bag f.o.b. (about 7.6 U.S. cents a pound). The Belgian Congo was the principal purchaser, although their purchases for the year dropped below those in 1956. Mozambique and Sao Tome were the next purchasers in order of importance.

Canned Fish: Some gains were made in 1957 by the fish canning industry due primarily to additional canning facilities in the Benguela area. The 1957 value of canned fish exports increased by 5,000 contos (US$174,000) in 1957 over 1956. The price was 16.5 escudos per kilo (US$0.26 a pound) f.o.b. (United States Embassy in Luanda, Angola, December 29, 1958.)

Argentina

VESSEL QUOTAS ENDED FOR MAR DEL PLATA FISHERMEN:

The Argentine Director General of Fishing announced February 16, 1959, that the Government will end the quota system which has been in effect for Mar del Plata fishermen for several years. Under this system, a committee representing the association of buyers and processors of fish in Mar del Plata assigned to each fishing boat a quota for each trip. If the boat's catch exceeded the quota, the surplus fish could not be sold and were dumped back into the sea. While this system had no official sponsorship, the Government is said to have tolerated its operation.

In the future, the Government will purchase at the price of the day any excess fish not wanted by the Mar del Plata buyers and will distribute it in Buenos Aires and other cities. Fresh fish is said to have become both scarce and expensive in the retail market in February. (United States Embassy report from Buenos Aires of February 26.)

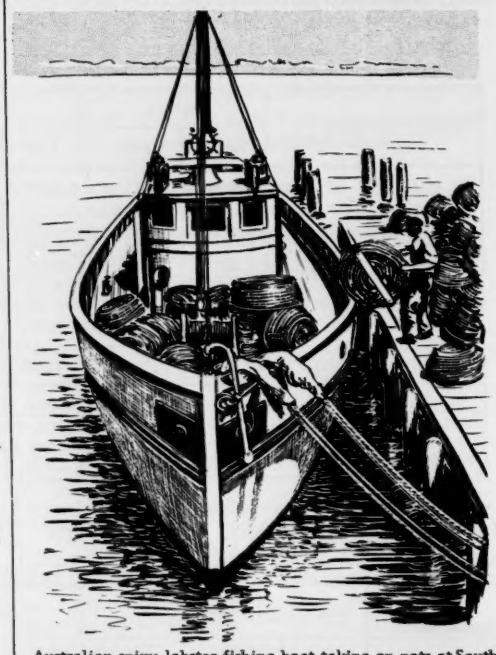
Australia

SPINY LOBSTER CONSERVATION REGULATIONS ANNOUNCED:

The Commonwealth Government of Australia has joined with the Western Australian Government in steps to conserve spiny lobster resources off the west coast of Australia. Official notices under Section 8 of the Fisheries Act to extend regulations covering spiny lobster fishing operations in territorial waters to the adjoining extraterritorial waters were announced by the Minister for Primary Industry.

The Minister said that this action, taken at the request of the Western Australian Government, was in accord with the Commonwealth's policy to cooperate with the states in the management of Australia's fisheries.

The three notices published on January 15, 1959, provide for: (1) a legal minimum length of $2\frac{3}{4}$ inches measured on the carapace for spiny lobster (crayfish) of the species Panulirus longipes;



Australian spiny lobster fishing boat taking on pots at South Fremantal.

(2) a closed season in the Abrolhos Is. area from August 16 to March 14 of the following year; (3) a closed season between 30° S. latitude and 33° S. latitude from September 1 to November 14 each year.

All these provisions had been previously announced for the territorial waters of Western Australia. (Australian Fisheries Newsletter, February 1959.)

Austria

CANNED SARDINE MARKET:

In spite of publicity campaigns for sea foods, Austrians prefer meat and eat fish only on special occasions, e.g., Christmas and Easter. Sardines continue to be used, not for principal meals, but for snacks and sandwiches.

Austria (Contd.):

Imports from Japan include mostly tuna; imports from South Africa are salmon and spiny lobster.

Table 1 - Austria's Imports of Canned Fish and Crustaceans, 1957 and January-September 1958

Country of Origin	Quantity		Value				Percentage of Sardines & Sardinelike Fish 1/
	1958	1957	1958	1957	1958	1957	
	(Metric Tons)		(1,000 Schillings)		(US$1,000)		Percent
West Germany	1,465	1,633	17,095	18,861	658	725	40 (small herring)
Yugoslavia	1,617	1,324	20,880	19,902	803	765	50 (true sardines)
Portugal	1,334	928	18,459	15,070	710	580	95 (true sardines)
Denmark	375	553	4,368	6,908	168	266	80 (small herring)
Morocco	68	120	930	1,843	36	71	100 (true sardines)
Japan	108	95	1,525	1,363	59	52	-
South Africa	7	2/	55	9	2	3/	-
Other 4/	163	181	2,323	3,371	89	130	-
Total Imports	5,137	4,834	65,635	67,327	2,525	2,589	

1/Estimated.
2/Less than 1 metric ton.
3/Less than US$1,000.
4/Imports of canned fish and crustaceans in smaller quantities from Norway, Italy, France, Peru, Greece, the Netherlands, Sweden, U.S.S.R., Spain, and Poland.

Even though Japan offers c.i.f. Rotterdam, cases containing 96 7½-ounce cans of pilchards at $9.80, they are not purchased by Austrians.

Prices of sardines in small-size cans which contain larger fish have decreased because of lower Portuguese prices and because the Austrian duty has been decreased. As for 1-pound and 2.2-pound cans which contain small-size fish, the decreased Austrian duty has been offset by increased Portuguese prices--thus leaving retail prices in Austria as before.

Table 2 - Range of Retail Prices for Canned Sardines in Austria in March 1959

Size of Can	Unit	Olive Oil		Vegetable Oil		Tomato Sauce		Fish Oil	
		Schilling	U.S.¢	Schilling	U.S.¢	Schilling	U.S.¢	Schilling	U.S.¢
3¼ - 5 oz.	per can	3.25 - 4.00	12.5 - 15.4	3.10 - 3.80	11.9 - 14.6	3.00	11.5	3.00 - 3.40	11.5 - 13.1
1 lb.	" "	15.00	57.7	-	-	-	-	-	-
1 kg. (2.2 lbs.)	" "	27.50	105.8	-	-	-	-	-	-
2 oz. and less	" "	2.40	9.2	2.30	8.8	-	-	-	-

The 8-ounce and 1-pound oval sardine cans have completely disappeared from the Austrian market and are no longer imported. (United States Embassy, report from Vienna, March 10, 1959.)

Belgium

CANNED SARDINE MARKET:

Imports of pilchards (California sardines) into Belgium rose from 1,961 metric tons in 1957 to 2,640 tons in 1958, while imports of sardines rose from 3,166 to 3,670 tons. According to two leading importers, orders have already been placed for the next season and current inventories are ample to meet the anticipated demand. These importers were interested to learn that California pilchards were again in plentiful supply. The Belgian market is supplied with pilchards principally by Japan and the United States, with smaller quantities from the Union of South Africa and Portugal. The demand is largely for the 7-1/2 and 15-ounce oval cans in tomato sauce. The Japanese 7-1/2 ounce size is very popular with the working classes, since one can is just sufficient for the workman's luncheon sandwiches and what he can afford to pay. There is apparently no market for the tall nor the oblong cans. The Belgian marking regulations prohibit the use of the word "sardines" to describe pilchards and it must not appear on cans of pilchards imported into this country.

Prices quoted at retail are about 16 francs (US$0.32) for an oval can (15-oz.) of American pilchards in tomato sauce, as compared with 12 francs (US$0.24) for the Japanese brand of the same size. The Japanese oval can of 212 grams (about 7-ozs.) is priced at 5 francs (US$0.10).

Belgium is a good market for American pilchards and there appears to be an excellent opportunity to recover some of the market which was lost to the Japanese when

Belgium (Contd.):

American pilchards were not available. In spite of the lower prices of the Japanese product, the quality is considered inferior and there is a definite demand for American products.

Imports of Sardines and Pilchards by Belgium-Luxembourg in 1958

Country	Metric Tons	1,000 Francs	US$ 1,000
Sardines (Tariff Item No. 120 a 1):			
Spain	17.7	529	11
France	16.3	1,214	24
Norway	8.8	339	7
Netherlands	3.3	119	2
Portugal	3,027.1	88,124	1,762
Yugoslavia	372.6	8,821	176
Morocco	221.4	5,392	108
Other	2.3	89	2
Total sardines	3,669.5	104,627	2,092
Pilchards (Tariff Item No. 120 a 2):			
Netherlands	90.5	1,574	31
Portugal	8.9	258	5
Japan	1,966.6	33,116	662
Union of South Africa	106.7	1,687	34
United States	466.6	9,488	190
Other	0.5	10	-
Total pilchards	2,639.8	46,133	922

Note: Values converted at rate of 50 francs equal US$1.

(United States Embassy in Brussels, dispatch dated March 17, 1959.)

Brazil

NEW JAPANESE-OPERATED FISHING COMPANY IN BRAZIL:

Late in 1958 it was announced that the Brazilian Hunting and Fishing Division of the Ministry of Agriculture had granted a Japanese fishing company of Miura, Japan, permission to bring fishing boats to Brazil and fish off the Brazilian coast for two years. In addition to this company, there are already two other Japanese fishing companies operating out of Brazil and a joint Brazilian-Japanese company engaged in whaling.

The new company was formed late in 1958 with a capital of CR$13 million (about US$130,000). Control is exercised by the company in Miura. Officers of the Cotia cooperative, a Japanese agricultural cooperative, are minor shareholders. The new company has its offices at Sao Paulo.

About six months ago, the company brought a 500-ton tuna long-liner which operated experimentally off the Pernambuco coast. This vessel returned to Japan in January for repairs and modifications and was expected back in approximately two months. It is not known at this time how many more vessels will be brought to Brazil, and when the new company will initiate operations on a commercial scale. The company intends to put up refrigerating plants in the city of Sao Paulo and in one of the towns in the interior of the state of Sao Paulo, probably within two years, but definite plans have not yet been formulated on this phase of the operation. (United States Consulate in Sao Paulo, dispatch dated February 12, 1959.)

Note: Also see Commercial Fisheries Review, April 1959, p. 66, March 1959, p. 59.

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RECIFE JAPANESE-SPONSORED FISHING COMPANY RUNS INTO DIFFICULTIES:

Since early in 1959 a large Japanese fishing firm and its Recife, Brazil, affiliate, have been subject to increasing public criticism due to various legal and operating problems. The result has been to create an atmosphere generally hostile to all foreign investment in the fishing industry in northeast Brazil, and particularly hostile to the Japanese.

Basic causes of the difficulties are threefold: (1) inadequate prices for frozen tuna; (2) overexpansion of Japanese fishing capacity; and (3) desire by the Japanese to avoid "nationalization" of their boats and crews. Their original agreement with the Brazilian Government required that the boats be 60 percent owned by Brazilians, and that their crews be two-thirds Brazilian within two years after they entered service.

After considerable fruitless wrangling with the Brazilian Government, three of the largest Japanese fishing boats were withdrawn from Recife, and began operating from Port of Spain, Trinidad, in October 1958. At the same time, two small fishing boats were returned to Japan "for repairs," and two others were taken out of fishing service because of their poor condition. These latter two ships were

Brazil (Contd.):

recently used to bring about 100 metric tons to Recife from Santa Catarina. The net result was that the monthly-landed capacity of the Japanese fishing boats based in Recife declined from about 1,500 tons in August 1958 to 360 tons in November. There was an immediate shortage of frozen tuna throughout the northeast (average monthly consumption is estimated at about 750 tons), and public ire has run high.

The Japanese are presently negotiating with the Government for a solution to their problems. The final result will probably include a decision on the legal status of the three ships operating out of Port of Spain, may include a redifinition of "nationalization" requirements, and is almost certain to allow a one-third increase in the wholesale and retail prices of frozen tuna, according to a dispatch dated March 4, 1959, from the United States Consulate at Recife.

Canada

CHANGES IN LABELING OF FOOD PACKAGES PROPOSED:

An amendment to Canada's General Labeling Regulations for Foods has been proposed, according to Trade Information Letter No. 167 of the Canadian Department of National Health and Welfare.

B. 01.003. Except as provided in these regulations, the label of a package of food shall carry:

A. On the main panel of the label.

1. The common name of the food and where the name consists of more than one word, each word shall be indentical type, identically displayed.

2. Except in the case of a food, the weight of which including the package is under two ounces, a correct declaration of net contents in terms of weight, measure or number in compliance with good commercial practice and, unless the manner of declaration of net contents is described or prescribed by any other statute of the Parliament of Canada or any regulation thereunder, this declaration shall be in type not less than one-half the size of the largest type on the label, in a contrasting color to the background of the label and immediately before or after the common name of the food, and

B. Grouped together on any panel other than the bottom of the package:

1. A declaration by name of any Class II, Class III or Class IV preservative therein,

2. A declaration of any food color added thereto.

3. A declaration of any artificial or imitation flavoring preparation added thereto.

4. In the case of a food consisting of more than one ingredient, and for which no standard is prescribed in these regulations, a complete list of the ingredients by their common names in descending order of their proportions unless the quantity of each ingredient is stated in terms of percentage or proportionate composition, and

5. The name and address of the manufacturer.

For many years the declarations of preservatives, artificial color and artificial flavor have been requested to appear on the main panel of the label. It is felt that the grouping of all mandatory declarations on one panel, not neccessarily the main panel, will allow the consumer to more readily obtain the desired information.

In addition to these general labeling requirements, there are a number of Sections of the Regulations which require specific declarations to appear on the main panel of the label. These will be given a critical review as to the necessity for their appearance in this manner. Where a label consists of only one panel, all the mandatory statements must, of course, appear on that panel. It is felt that in these cases all the mandatory statements, with the exception of the declaration of net contents, shoud be grouped together on one portion of the label.

It is to be clearly understood that all mandatory statements must appear legibly and conspicuously. This is provided for in Section B. 01.004 of the Regulations. Since these would be major changes in the labeling requirements for foods, a suitable period of time for conversion would be allowed.

Chile

FOREIGN VESSELS AUTHORIZED TO FISH OFF NORTHERN COAST:

A March 10, 1959, decree of the Chilean Ministry of Agriculture authorizes the issuance of licenses for foreign fishing vessels to fish Chilean waters as far south as the southern boundary of Antofagasta Province. The licenses are valid for six-months periods and no fee is specified. In order to secure permission, the fishing vessel's master must agree to deliver his catch to Chilean fish product factories in Antofagasta and Tarapaca provinces.

It has been reported that the fish meal and fish product factories of northern Chile were not receiving adequate catches from the Chilean fishing industry to maintain desired production levels. This decree is an effort to relieve this situation. Pertinent excerpts from the Decree follows:

(1) In order to solicit the authorization to fish, the vessels should enter the ports of Arica, Iquique, or Antofagasta, and should present an application in duplicate to the maritime authorities, stating: the name and address of the national company to which they will deliver their catch; the name of the vessel and its national flag; port of registration, name of its owner and its master; year the hull was constructed and whether it is of wood or steel; number of crew, and the characteristics of its motor and auxiliary equipment.

Chile (Contd.):

(2) In addition, the application should indicate the kind of fish which it will take, the approximate amount, the type of fishing mentioning the geographic points or parallels where it will be done and the beginning and ending dates, stating, finally, to which port the vessel will return so it may be boarded by inspectors.

(3) The maritime authority will extend permission, sending the duplicate of the application to the Ministry of Agriculture. The license will indicate: the name and address of the national company to which it will deliver its catch; the name of the vessel, its nationality, and the period for which fishing is authorized. (United States Embassy, Santiago, report of March 11, 1959.)

Cuba

FISHERIES TRENDS, JANUARY 1959:

At the beginning of 1959, the cornerstone for Havana's $3.5 million fishing terminal was laid, with completion scheduled about March 1959. The Cuban-leased Japanese training vessel Sumiyoshi Maru conducted several commercial and training voyages during 1958, including an exploratory survey of a portion of Cuban waters. The National Fisheries Institute acquired from Germany a $225,000 cod-fishing vessel, with a capacity of 180 metric tons of fish. The plan is to use the vessel to fish for cod for drying in Cuba.

A convention between the United States and Cuba for the conservation of shrimp was signed in mid-August 1958. It has been ratified by the Cuban Senate and now awaits ratification by the United States, according to a February 26, 1959, dispatch from the United States Embassy in Havana.

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NEW MARITIME DEVELOPMENT COMMISSION GIVEN JURISDICTION OVER FISHERIES:

A new law (No. 84 of February 17 and published in the Official Gazette of February 20, 1959) created the Cuban Maritime Development Commission as an autonomous organization with regulatory authority over the activities of the Cuban merchant marine, the fishing industry, the exploitation of marine resources, and nautical sports and tourism. It is also given authority over maritime concessions.

The law briefly sets forth the powers of the Commission and provides that it will be headed by the Chief of Staff of the Navy, under the direction of the Minister of National Defense. The governmental officers presently exercising any of the powers granted to this new agency are to be under its control in the future.

The National Fisheries Institute (Instituto Nacional de la Pesca) was thus transferred on February 17, 1959, to the jurisdiction of the new Office of Maritime Development and is no longer under the control of the Ministry of Agriculture. The President of the Institute, announced plans for conducting necessary scientific studies to take advantage of sea resources, such as fish species habitats, breeding seasons, designation of the proper closed seasons, etc. The plan also calls for adequate training of Cuban fishermen in handling the most modern fishing gear. Another aspect is the scientific industrialization needed to obtain the best seafood products without wasting such resources. It is hoped to create consumer demand for more fish and seafood products inasmuch as Cuban consumption of these items is notoriously low. The plan also includes fishing cooperatives, credits, piers, refrigerator plants and ice houses, and an adequate distribution network. Likewise, the improvement of the fisherman's lot through better housing, schools, social security, and retirement benefits is projected. A civic consciousness is being sought to foster the conservation of fishery resources along with an increase in commercial fishery activities and the development of sports fishing as a tourist attraction.

Ghana

CANNED SARDINE MARKET:

Imports of fish, fish products, and fish preparations by Ghana are not classified to show individual items, but trade sources estimate that the annual imports of canned sardines (pilchards) amount to about US$1.4 million in value. For the first 11 months of 1958 imports of all fishery products were valued at about US$3.8 million (16.9 million pounds). Of this amount the United States supplied about 150,000 pounds valued at US$35,874, the United States Embassy in Accra reported on March 12, 1959.

Comparative Prices Quoted in Ghana for Canned Sardines, March 1959

Case and Can Size Style of Pack	Los Angeles (f.o.b.)	Union of So. Africa (f.o.b.)	Japan (c&f)
	(US$)		
In tomato sauce:			
48 1-lb, tall	6.25	7.00	-
48 8-oz, tall	-	4.48	-
48 16-oz, oval	7.25	-	-
48 15-oz, oval	-	-	8.71
100 5-oz.	6.00	-	7.87
100 5-1/2-oz.	-	6.86	-
96 7-1/2-oz. oval	-	-	9.89

Note: One £G1 = US$2.80.

Imported canned sardines have a well-established position on the Ghana market and are a staple food in the African diet wherever the family budget permits. Consumption of pilchards and other inexpensive protein foods is still far below the saturation point in Ghana and may be expected to increase as personal income grows. For the mass of the population, there can be no question at this time of substituting pilchards for a higher-cost protein food, but the market could be hurt by the entry of cheaper fish products or other less expensive protein foods.

Pilchards are currently imported mainly from the Union of South Africa (South-West Africa) and Japan. At present American-canned pilchards are virtually unknown here but one American brand, which was formerly sold widely in the country, attained such a high degree of popularity that the name became, and still remains, the accepted word in the local vernaculars for canned pilchards. The peak import months coincide with the slack herring season off the Ghana coast from November to March. The most popular sardine packs are the 5-oz. and the 1-lb. can in tomato sauce. The natural pack is not well adapted to the local market. Importers are careful to adjust the flow of purchases to seasonal demands and generally hold stocks within quantities sufficient to meet normal consumption. Supplies from the Union of South Africa and Japan have been plentiful during the past several years.

The import trade in canned pilchards is dominated by the large foreign-owned trading firms. These same firms may also distribute at retail but sell the bulk of the imports at wholesale to Ghanaian dealers throughout the country. These firms state that the various American packs in tomato sauce are adapted to the local market and concede the American product a slight quality edge over foreign brands. Trade in American pilchards is inhibited, however, by the general dollar shortage. The typical foreign-owned trade concern is allocated a fixed annual dollar license for consumer goods and naturally tends to confine purchases to those American products which are unique in their field or which undersell the comparable product obtainable from free-currency areas, thus realizing the maximum profit from the limited dollar quota. Pilchards imported from the United States do not offer an exceptional profit margin since a comparable product is obtainable without currency restrictions from the Union of South Africa at or about the same price as from the United States.

African-owned firms import only minor quantities of pilchards on their own account, although they are the principal link between the foreign-owned importer and the African consumer. The African importer is at a distinct disadvantage here as in many other import fields since exporters normally prefer to deal with the stronger European houses whenever these show a willingness to take over the whole of this country's requirements in any given product. On the other hand several African importers interviewed expressed eagerness at the possibility of getting into the importation of pilchards and would welcome the opportunity to establish trade contacts with the United States exporters. There is some outlook for success in distributing through these channels since the Ghana Government, in its desire to aid the expansion of African businesses, frequently adopts a liberal attitude in allocating dollars to these firms. Exporters must be prepared, however, to take on definite credit risks in dealing with African firms and must expect orders in erratic flows and in smaller lots. (United States Embassy, Accra, Ghana, report of March 12.)

Guatemala

SHRIMP FISHERY TRENDS:

There are now ten shrimp trawlers operating in the Caribbean out of Puerto Barrios, Guatemala, with three more scheduled to arrive. The boats are reported to be averaging around three boxes a night.

The Pacific shrimp fleet was cut in half when one of the two trawlers operating there sank recently. It is reported that the unloading problem on the Pacific has not yet been solved. Although the shrimp potential on the Pacific coast of Guatemala appears to be greater than that of the Caribbean coast, the lack of harbor facilities has hampered the development of the fisheries. The only port facilities are two piers, one at Champerico and the other at San Jose. (United States Embassy, Mexico, report of March 12, 1959.)

Hong Kong

SHRIMP LANDINGS, OCTOBER-DECEMBER 1958:

Shrimp landings in Hong Kong in the fourth quarter of 1958 totaled 553 metric tons, a drop from the preceding quarter. However, the fall and winter months are the slack season for shrimp fishermen. (United States Consulate at Hong Kong, report dated January 30.)

Iceland

EXPORTS OF MARINE PRODUCTS TO THE UNITED STATES, 1957-58:

Iceland's exports of marine products to the United States in 1958 amounted to 22,401.2 metric tons (value US$7,707,000) as compared with 13,090.6 tons (value US$4,763,000) in 1957. Exports of frozen fish increased from 10,985.2 tons (value US$4,278,782) in 1957 to 19,191.3 tons (value US$6,981,672) in 1958, an increase of 81.3 percent in quantity and 63.2 percent in value.

Table 1 - Quantity of Iceland's Exports of Marine Products to the United States, 1957-1958

	Quantity	
	1958	1957
	....(Metric Tons)....	
Frozen:		
Fish	19,191.3	10,985.2
Shrimp and lobster	82.1	37.8
Herring	1.0	-
Whale meat	948.5	-
Salted or dried:		
Fish (wet)	152.7	-
Stockfish	-	3.6
Fish roe	24.7	42.8
Herring	365.9	5.7
Fish skins	-	655.7
Canned fish	32.2	8.0
Fish solubles	670.0	-
Cod-liver oil	932.8	1,351.8
Total	22,401.2	13,090.6

Table 2 - Value of Iceland's Exports of Marine Products to the United States, 1957-1958

	Value			
	1958		1957	
	Ikr. 1,000	US$ 1,000	Ikr. 1,000	US$ 1,000
Frozen:				
Fish	113,522	6,982	69,573	4,279
Shrimp and lobster	2,527	155	1,376	85
Herring	2	-	-	-
Whale meat	2,247	138	-	-
Salted or dried:				
Fish (wet)	681	42	-	-
Stockfish	-	-	42	3
Fish roe	159	10	281	17
Herring	1,583	97	24	1
Fish skins	-	-	540	33
Canned fish	273	17	120	7
Fish solubles	865	53	-	-
Cod-liver oil	3,471	213	5,488	338
Totals	125,330	7,707	77,444	4,763

Note: Values converted at rate of Ikr. 16.26 equal US$1.

Marine products exports to the United States in 1958 made up close to 96.3 percent of the total quantity and about 94.2 percent of the total value of all exports to the United States. Comparable figures for 1957 were 95.5 percent of the quantity and 85.3 percent of the value, according to a recent dispatch from Reykjavik.

* * * * *

EXPORTS OF SELECTED FISHERY PRODUCTS, 1958:

Exports of Iceland's most important commodities for 1958 include several fishery items of interest to the United States fisheries. There was a considerable increase in exports of frozen fish, herring oil, herring meal, ocean perch meal, and fish meal as compared with 1957 (see table), according to the National Bank of Iceland's January 1959 Statistical Bulletin.

Table 1 - Icelandic Total Exports of Selected Fishery Products, 1957-1958

Product	1958		1957	
	Qty.	Value 1/	Qty.	Value 1/
	Metric Tons	US$1,000 (f.o.b.)	Metric Tons	US$1,000 (f.o.b.)
Frozen fish	65,883	23,306	57,089	19,938
Herring oil	10,665	2,143	8,664	1,652
Herring meal	11,601	1,867	8,090	1,262
Ocean perch meal	16,146	2,421	4,940	728
Fish meal	26,535	4,094	24,264	3,658

1/ Conversion value: 1 krona equals 6.13 U. S. cents.

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FISHERIES TRENDS, OCTOBER-DECEMBER AND YEAR 1958:

Rich new fishing grounds for ocean perch were discovered in late July 1958 by an Icelandic survey ship in the trough northeast of Belle Isle channel between Newfoundland and Labrador. Despite the distance from home ports, the new grounds attracted almost the whole Icelandic trawler fleet during the autumn, and the result was a spectacular increase in the catch of ocean perch for the fourth quarter, far offsetting the slight decline in the off-season catches of other species combined, compared to the last quarter of 1957.

Iceland (Contd.):

While the financial position of the trawlers was eased by the Export Fund Act of May 29, 1958, which put them in the same position as motorboats with respect to price supports, the chief reason for the recovery of the trawlers was unquestionably the discovery of the new ocean perch grounds.

Table 1 - Icelandic Fishery Landings, October-December and Annual, 1957-58

Product	Oct.-Dec.		Year	
	1958	1957	1958	1957
	(Metric Tons)			
Ocean perch (drawn)	46,664	14,115	109,920	61,552
Cod (drawn)	14,321	20,200	235,448	201,161
Herring (round)	13,167	12,153	107,318	117,495
Other	9,748	13,189	52,352	56,119
Total	83,900	59,657	505,038	436,327

The total fish catch for 1958 was the highest in Iceland's history. But this was not fully reflected in exports, because export stocks, which were abnormally and dangerously low at the end of 1957, were increased considerably. The total of export stocks at the end of 1958 was Ikr. 228 million (US$14,000,000) or Ikr. 70 million (US$4,298,000) more than a year earlier.

The fourth quarter is always the least active, accounting for only about 15 percent of the year's catch. While the trawlers seek ocean perch in Greenland or Newfoundland waters, the motorboats fish with drift nets for herring off the Southwest Coast and in Faxa Bay. This is always a much smaller catch than the main North Coast summer season. In 1957 the autumn herring season was a failure, with only 12,513 tons caught during the last three months of the year. In 1958, despite a virtual disappearance of herring during October, the third quarter catch was somewhat improved, at 13,167 tons. For the year as a whole, the decline in the total tonnage of herring (107,318 as compared to 117,495 in 1957) was more than offset by the improvement of the quality. The herring were fatter and suitable for salting, so that all of Iceland's advance sales commitments were met. With about 50 percent more herring salted in 1958 than in 1957, the supply of herring meal and oil (sold in free currency markets) declined, but because of large 1957 stocks the exports of these products increased during the year. The Soviet Union is the chief market for salted herring, absorbing about one-third of the total production, and other eastern countries are also important markets.

There has been a noticeable trend in recent years to use an increasing portion of the white-fish catch for freezing; this continued in 1958, accentuated by the heavy autumn catch of ocean perch, which is chiefly used as frozen fillets for the Russian and United States markets.

During 1958 about 65 percent of the total white-fish catch, as compared to 56 percent in 1957 and 48 percent in 1956, went to the freezing plants. At the same time, there was a decline in other forms of utilization, notably export on ice, salting, and processing as air-dried stockfish.

The impact of the Icelandic 12-mile fishing limit regulations on the Icelandic trawlers began to be felt early in 1959 as they returned to the home grounds for the main fishing season, during which they are excluded in most areas from trawling within 12 miles. Last year over 60 percent of their catch was within the new 12-mile limit, and they already have found that catches outside the line are poor (United States Consulate dispatch of February 27, 1959, from Reykjavik).

* * * * *

REPLIES TO PROTESTS ON EXTENSION OF FISHING LIMITS TO 12 MILES:

Icelandic Foreign Minister Gudmundsson on February 28, 1959, handed the resident Ambassadors of France, Germany, and Sweden, and the British Charge d' Affaires Aide Memoires, dated February 25, replying to protests made by those countries prior to September 1, 1958, against Iceland's unilateral extension of fishing limits to 12 miles. The Aide Memoire presented to the British states that "the Government of Iceland hoped that discussions which took place before the Regulations of June 30, 1958, entered into force on September 1, 1958, would bring about a solution of the problems involved. These discussions, however, had not been concluded by September 1, 1958, when the Regulations entered

Iceland (Contd.):

into effect and the activities of British warships in Icelandic waters from that day onward made all further discussions impossible."

The Aide Memoire goes on to say that: "In the view of the Icelandic Government the two concepts of coastal jurisdiction and of the freedom of the seas are parallel concepts so that neither can be considered to be in derogation of the other. The delimitation of coastal jurisdiction over fisheries at a distance of 12 miles from appropriate base-lines cannot be said to be in violation of international law or incompatible with the freedom of the seas."

Iran

CAVIAR PRODUCTION AND MARKETING:

Three-year contracts signed in 1956 covering the sale of Iranian caviar by the Iranian Fisheries Company to a New York City firm and to a European firm for export to Europe will expire in July 1959. The annual contract with Russia also terminates in July 1959. It was reported by the Managing Director of the company that invitations to bid on new contracts were expected to be issued on or before April 21, 1959. The invitation to bid was to call for 30 metric tons of caviar for consumption in the United States and 30 tons for consumption in Europe. Both quantities are subject to increase. Bidders would be expected to take a quantity of sturgeon in addition to the caviar.

Production of caviar (see table 1) by the Iranian Fisheries Company amounted to 142.6 metric tons for the year ending August 1958. This is substantially more than the 126.3 tons produced in the year ending August 1957, 113.8 tons in the year ending August 1956, and 94.8 tons in the year ending August 1955. From August 1958 through January 20, 1959, 31.4 tons of caviar were prepared and the estimate for spring 1959 amounts to 92.3 tons.

The Iranian Fisheries company has undertaken to supply (see table 2) Russia with 46 tons of caviar annually since 1956 and 30 tons each annually to the United States and Europe. Local sales during the last three years totaled 16.6 tons.

Table 1 - Iran's Annual Distribution Plan for Caviar, 1956-1958

Type & Grade	Beluga		Asetra		Sevruga		Pressed		Total
	No. 1	No. 2	No. 1	No. 2	No. 1	No. 2	No. 1	No. 2	
	(Metric Tons)								
Country:									
United States	6	5	-	2	1	10	3	3	30
Europe	4	1	12	5	5	-	3	-	30
Russia	4	-	11	2	11	7	6	5	46
Totals	14	6	23	9	17	17	12	8	106

Table 2 - Iran's Production of Caviar, 1955-1958 (Year Ending August)

Type & Grade	1958	1957	1956	1955
	(Metric Tons)			
Beluga No. 1	20.0	22.4	-	-
Beluga No. 2	2.8	3.3	-	-
Asetra No. 1	30.5	22.0	-	-
Asetra No. 2	10.9	8.3	-	-
Beluga and Asetra No. 1	-	-	39.1	29.3
Beluga and Asetra No. 2	-	-	10.0	15.3
Sevruga No. 1	23.6	18.2	14.7	13.6
Sevruga No. 2	35.9	29.6	16.0	18.2
Pressed No. 1	9.7	13.5	28.3	11.6
Pressed No. 2	8.7	8.7	5.6	6.6
Waste	0.5	0.3	0.1	0.2
Total	142.6	126.3	113.8	94.8

Italy

FISHING COMPANY PERMITTED TO FISH IN TUNISIAN WATERS:

A long-standing dispute over fishing rights inside the 12-mile limit or 50-meter line, whichever is furtherest (claimed as Tunisian territorial waters), was partially solved early in March when an Italian fishing company signed an agreement with Tunisia which would allow four of the company's vessels to fish in Tunisian waters provided the catches

Italy (Contd.):

are sold in Tunisian ports. In practice this will mean that the lower-grade fish will be sold in Tunisia while the better fish, including some species which are now unavailable to the Italian market, will be exported to Italy and France. The profits realized from these exports will be "repatriated" to Tunisia and divided equally between the Italian company and the Government of Tunisia.

Japan

CANNED TUNA IN BRINE EXPORT TARGET TO UNITED STATES IN 1959:

A total of almost 2.5 million cases is the Japanese production target of canned tuna-in-brine for export to the United States in the business year of 1959. This will be divided: the merit quota 1,600,000 cases, free quota 850,000 cases, and for newcomers 10,000 cases. This was decided upon in mid-February by the Japan Export Canned Tuna Manufacturers Association. The total for 1958 was 2.0 million cases. The free quota of 850,000 cases was allocated to three periods--(1) April through June, (2) July through December, and (3) January through March of 1960. In the 1st and 2nd periods 340,000 cases, respectively, have been allocated and in the 3rd period 170,000 cases. Also, it was provided that no packer should pack more than 5,500 cases in any period by using the free quota.

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EXPORTS OF FROZEN FISHERY PRODUCTS OTHER THAN TUNA, 1957-58:

Japanese exports of frozen fishery products other than tuna to foreign countries in 1958 were substantially higher than in 1957. Frozen salmon exports were higher by about 22 percent.

Table 1 - Japanese Exports of Frozen Fishery Products Other than Tuna, 1957-58

Species	1958	1957
	(Metric Tons)	
Rainbow trout	857	847
Shellfish	233	204
Black marlin	513	515
Shrimp	1,176	1,019
Frog legs	205	407
Salmon	5,354	3,036
Scallops	541	281
Swordfish	5,058	4,133
Swordfish steak	805	1,016
Miscellaneous	2,124	1,401
Total	16,866	12,859

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EXPORT PLANS FOR FROZEN AND CANNED FISHERY PRODUCTS, 1959:

The Japanese Government has revealed its plans for 1959 total exports of canned and frozen fishery products, according to reports received from Japan in February. Included in the totals are exports to the United States.

Japanese Export Plans for Frozen and Canned Fishery Products, 1959

Product	Quantity		Value	
	1959 Est. Target	1958 1/ Exports	1959 Est. Target	1958 1/ Exports
	(Metric Tons)		(US$1,000)	
Frozen Fish:				
Albacore tuna	40,800	43,100	10,566	10,720
Yellowfin tuna	84,700	60,800	19,040	14,900
Other tuna	6,100	2,610	1,200	532
Broadbill swordfish	5,000	4,000	2,500	2,600
Salmon	5,000	2,200	4,000	1,650
Rainbow trout	1,000	1,000	800	850
Misc. fish	6,000	4,500	3,000	2,250
Total	148,600	118,210	41,106	33,502
	(1,000 Cases)			
Canned Fishery Products:				
Tuna in brine	2,200	2,200	17,600	17,600
Tuna in oil	1,100	1,050	7,480	7,140
Salmon and trout	2,100	2,720	50,900	72,630
Crab meat	500	618	9,000	12,208
Sardine	900	664	6,750	5,312
Mackerel-pike	1,000	598	6,500	3,946
Others	2,100	2,037	16,800	16,296
Total	9,900	9,887	115,030	135,132

1/Estimates.

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FROZEN TUNA AND SWORDFISH ALLOCATIONS FOR UNITED STATES MARKET IN 1959:

According to preliminary information released in February 1959, the Japan Frozen Tuna Manufacturers Association had indicated that the allocation of frozen tuna for the United States market in 1959 will be: frozen albacore 29,700 metric tons, with the method of allocation to be the same as in 1958; frozen tuna loins 2,970 tons with a merit quota

Japan (Contd.):

allocation to be based on the average of the past three years; frozen yellowfin tuna 35,000 tons derived from landings at Japanese ports (merit quota 28,000 tons, free quota and reserve 6,800 tons, and new 200 tons), plus intermediate or landings at foreign ports--120 landings, 2 landings per vessel per year.

The f.o.b. Japan floor prices of frozen loin and frozen tuna applied for the latter part of the Japanese 1958 fiscal year (ends March 21, 1959) were: $730 a ton for albacore loins (previously $800), $565 a ton for yellowfin loins (previously $620-640), $190 a ton for large yellowfin, $210 a ton for medium yellowfin, and $220 a ton for small yellowfin. It has been indicated that the same prices will apply in 1959.

In addition, the export to the United States of 4,455 tons of frozen swordfish is planned, 10 percent less than in 1958.

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FROZEN TUNA EXPORTS TO UNITED STATES AND CANADA:

Japanese frozen tuna exports to the United States and Canada in 1958, according

Species	1958	1957
	Metric Tons	
Tuna:		
Albacore	26,026	31,958
Albacore loins	395	2,746
Yellowfin	45,493	25,177
Yellowfin loins	437	2,678
Big-eyed	3,150	602
Skipjack	2,710	21
Bluefin	115	254
Total	78,326	63,436

to the Japan Frozen Food Exporters Association, totaled 78,326 metric tons, about 23.5 percent higher than the 63,436 tons exported in 1957.

In addition, about 10,000 tons were landed by 27 trips of Japanese tuna clippers directly at foreign ports, of which about 50 percent was transshipped to the United States.

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INTERNATIONAL TUNA PUBLICITY PLANS FOR 1959:

Unused funds set aside for international advertising or publicity by the Japanese tuna industry for fiscal year 1958 in the amount of US$34,722 will be carried over to fiscal year 1959 (began April 1, 1959). Adding an equal amount for the new fiscal year plus the Government appropriation, $138,888 will probably be available for fiscal 1959 for international advertising of canned tuna. Presumably most of the money will be used to advertise Japanese canned tuna in the United States.

The International Tuna Society had originally planned to do some advertising in fiscal year 1958, but later decided not to follow through on the plan.

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PHILIPPINE CANNED FISH IMPORT RESTRICTIONS AFFECT JAPANESE CANNERS:

The Japanese fish canners report that the following import restrictions which control the amount of canned fish to be taken by the Central Bank of the Philippines will affect them to a considerable degree: (1) the Philippines cut the canned fish import quota for 1959 to 25 percent of the actual imports in 1958; (2) the Philippine regulations provide that new import licenses will be issued only to Philippine-lineage and American-lineage firms (Japanese contacts are with Chinese firms); and the raise in the special duty imposed on canned mackerel, horse mackerel, etc., from 13.6 percent to 17 percent ad valorem.

In addition, an increase in the general tariff (now 15 percent ad valorem for canned saury and sardines) is reported to be under consideration by the Philippines.

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PLANS FOR PACK OF CANNED FISHERY PRODUCTS IN 1959 FOR DOMESTIC CONSUMPTION:

The Japanese planned production of canned aquatic products for consumption in Japan in 1959 is estimated to be a little more than 25 million cases. About

Japan (Contd.):

a 10-percent increase yearly for the past several years is noted.

According to statistics by the Japan Canning Society, in 1957 a total of 31.2 million cases of canned aquatic products were packed, of which 10.3 million cases were exported and 20.9 million cases were consumed domestically. The 1958 pack was estimated at 35.0 million cases, of which 12.0 million cases were exported and 23.0 million cases were consumed in Japan--in both cases a 10-percent increase over the previous year.

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TUNA IN AGAR JELLY:

Additional information has been obtained on the method used by one Japanese canner for packing tuna in agar jelly, according to a March 10, 1959, dispatch from the United States Embassy in Tokyo. The information refers to the processing of one particular lot of fish.

A lot of 1,216 pieces of fresh skipjack loins (each weighing about 4 pounds) totaling 2,250 kg. (4,950 pounds) was used. The fish was precooked for 60-70 minutes without pressure. The center temperature of the loins was kept "as low as possible;" it measured 58°-64° C. (136.4°-147.2° F.) in some batches and 57°-63° C. (134.6°-145.4° F.) in others.

After precooking, the loins were cleaned just as for packing in oil. They were then immersed in water at 80°-90° C. (176°-194° F.) for 5 minutes, to facilitate division to flakes ("myomeres"). The loins were then pulled apart by hand, a few large segments were packed in the can first, after which the can was filled with flakes and weighed. Finally a few large pieces were put in on top of the flakes to give a good appearance when the can is opened.

The can was next filled with a measured amount of hot jelly at about 30° C. (86° F.), vacuum-sealed, and retorted for 80 minutes at 7-pounds pressure.

The yield from this lot of skipjack was 161.17 cases of canned tuna in jelly, 31.13 cases of No. 5 cans for the domestic market, and 9.3 cases of flake tuna. Recovery is given as one case of 48 7-oz. cans of jellied tuna per 13.976 kg. (30.7 pounds) of raw fish.

The formula for the jelly sauce used in this pack is as follows (quantity per case in parentheses): 7.2 kg. powdered agar (58.06 g.), 4.8 kg. cellulose gluconic acid (38.7 g.), 6.0 kg. gelatin (48.4 g.), 0.72 kg. pepper (5.8 g.), 28.8 kg. powdered skim milk (232.3 g.), 25.1 kg. fresh onion juice (202.4 g.), 4.41 kg. refined white sugar (35.56 g.), 15.6 kg. salt (126.8 g.), 5.25 kg. cottonseed oil (42.3 g.), 2.4 kg. monosodium glutamate (19.3 g.), 0.6 kg. water, 48 cc. spice mixture "A" and 150 cc. spice mixture "B" (apparently standard food flavoring mixtures imported from the United States).

Mexico

FISHERY BUREAU REORGANIZED AND NEW POLICY ANNOUNCED:

On March 3, 1959, the Mexican Minister of Industry and Commerce announced the new policy of the Bureau of Fisheries and Allied Industries, which was recently transferred from the Ministry of Marine. This policy consists principally of two phases: (1) increase consumption of low-priced fish throughout Mexico; (2) give impulse to the Mexican fishing industry.

The Bureau of Fisheries is undergoing a complete reorganization. The new plan calls for a Director, an Assistant Director, and three Departments. (1) The Technical Department will control three offices: (a) Office of Biological Studies; (b) Office of Production and Markets; (c) Office of Statistics. (2) The Department of Control and Supervision will control: Office of National Registry; Office of Contracts and Permits; Office of Violations; Office of Supervision. (3) The Department of Promotion will control: Office of Fishcultural Development; Office of Consumption Development; Office of Maritime Development. Most of the Offices will be in charge of two or more sections.

The Technical Department is envisioned as a research unit, the Department of

Mexico (Contd.):

of Control and Supervision as an administrative unit, and the Department of Promotion as a development unit.

* * * * *

NEW CLOSED SEASON FOR SHRIMP FISHING ON WEST COAST:

The Mexican closed season for shrimp in open waters along part of the Pacific Coast of Mexico has been changed to July 16 through September 15 by administrative order, effective March 7, 1959. The area involved includes the open waters along the coasts of Nayarit, Sinaloa, Sonora, and the east coast of Baja California. Previously the closed season, which had been in effect for three years, was from March 16 to April 15 with a possible extension to May 15 and in addition to the areas mentioned, including the west coast of Baja California.

These changes affect the trawler fleet only and it is not anticipated that they will make appreciable differences in the over-all annual shrimp catch of the Pacific coast. However, March and April shipments of shrimp from Mexico's west coast are expected to be greater in 1959 than last year, but the August and September shipments should be correspondingly lighter. (United States Embassy report from Mexico, March 11, 1959.)

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SHRIMP FISHERY TRENDS, MARCH 1959:

Mexico is experiencing poor shrimp catches per vessel in the Gulf of Mexico. But catches are good at Salina Cruz on the west coast. Reports indicate that the Tampico trawlers are averaging less than one ton of shrimp tails a month, the Carmen vessels about one ton, and those in Salina Cruz around 4 to 5 tons a month. Because of these conditions trawlers are still transferring from Carmen to Salina Cruz.

Weather has played an important role in the Gulf of Mexico. A continual succession of "northers" has held the boats in port many days. The "norther" season is about over and conditions in the Gulf are expected to improve.

Catches in Salina Cruz are continuing at a high level, but it is anticipated that in accordance with past seasons they were expected to slacken off in April or May. The sizes of shrimp in Salina Cruz are said to be getting larger than they were a few weeks ago. It is reported that only about 30 boats from the Guaymas-Mazatlan fleets moved to Salina Cruz this season, whereas an estimated 185 undertook the migration in 1958.

Guaymas-Mazatlan shrimp catches are reported to be better this year than at the same time last year. The recent elimination of the March 15 to April 16 closed season in this area and better catches have kept these fleets in home waters. (United States Embassy report from Mexico, March 12, 1959.)

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SHRIMP STOCKS OFF WEST COAST COMPARED WITH 1936:

The Japanese fishing vessel Minato Maru in 21 consecutive days of fishing along the virgin coast of Sinaloa, Mexico, in May 1936 caught 92,074 pounds of shrimp (headless). The average daily catch was 4,384 pounds of tails. The Minato Maru fished a V. D.-type net with a mouth (not including wings) of 20 meters (about 65.5 feet). This phenominal catch when compared with current yields per boat helps to answer the question "What is a good virgin shrimp fishing ground?"

Some 10 years later on these same grounds, when fishing intensity had increased considerably, but still not extremely intense, a group of 8 small boats operating between August 1946 and May 1947 caught a daily average of more than 1,000 pounds each of headless shrimp. These boats were between 28 and 38 feet in length, with 40 to 55 horsepower gasoline engines, and hauled nets between 30 and 45 feet along the lead line. They fished an average of 12 hours a day, returning to port each night.

In the same area under present conditions and with modern trawlers a catch of 80,000 pounds of tails during a 10-months season is considered good. The fishing intensity has increased many times during this period and in turn

Mexico (Contd.):

increased the total annual catch (United States Embassy, Mexico City, report of March 6.)

Morocco

FISHERIES TRENDS, JUNE-DECEMBER 1958:

Moroccan exports of canned sardines June-September 1958 were about the same as for the same period in 1957 (598,000 and 596,000 cases). Exports of other canned fish rose from 49,000 cases to 157,000 cases.

In view of the policy of the Moroccan Government to divert trade outside the franc zone, it is notable that while exports of canned fish to the franc zone during June-September fell from 471,000 cases in 1957 to 392,000 in 1958, exports elsewhere were generally higher. By far the steepest increase was to the Eastern European countries, where the number of cases rose from 15,000 in 1957 to 213,000 in 1958. Exports to the satellite countries then constituted about 30 percent of total exports of canned fish during the third quarter of 1958. Lower exports to France may have resulted from the scare about poisoned Moroccan canned sardines which was current during the period. On September 12, 1958, the French Ministry of the Interior announced that there were no grounds to the poisoning rumors. Since then it is reported that sales in France of Moroccan sardines have recovered.

In the first half of 1958, 30,374 metric tons of sardines were processed by the Moroccan fishing industry. Because, presumably, of the large inventory of canned sardines, 27,400 metric tons were made into fish meal, and only 1,400 tons canned.

The Central Committee for Ocean Fishing has been constituted by a recent decree to advise on the possibility of selling seafood throughout Morocco and also on more general questions. Articles have appeared in the newspapers from time to time deploring the fact that Moroccan fish consumption is extremely low, and offering possible remedies, particularly the establishment of cold-storage and transport facilities inland.

In an editorial entitled "Automation and Unemployment," At Taliaa expresses its concern about the introduction of automation into the fishing industry. By automation is meant electrical fishing which is still in the experimental stage, although a company has been formed in Tangier to explore the possibilities of the new method. So far, no privately-owned commercial fishing boat is equipped with gear for electrical fishing.

About 90 percent of the fresh and frozen fish exported from Morocco goes to Algeria. Exports will be seriously affected by the devaluation of the French franc because of the existence of a price ceiling in Algeria and because of the relative weakness of the industry in Morocco.

Trade agreements including the export of Moroccan fishery products were concluded with three countries during the last quarter of 1958. Canned sardines are to be imported by Communist China (75 million francs or about US$178,000), the United Arab Republic (170 million francs or about US$405,000), and Czechoslovakia (380 million francs or about US$905,000). Czechoslovakia is also to import 50 million francs or about US$119,000 worth of fish meal.

Finland and Sweden renewed agreements made in 1957. Finland is to import sardines (53.3 million francs or about US$127,000) and Sweden an unspecified amount of canned fish, according to a January 21 dispatch from the United States Embassy in Rabat.

Note: Values converted at rate 420 francs equal US$1.

Norway

ANTARCTIC WHALING PRODUCTION LOWER FOR 1958/59 SEASON:

According to estimates published in the Sandefjord press, the nine Norwegian whaling expeditions to the Antarctic produced 117,746 long tons (706,445 bbls.) of whale oil and 13,975 tons (83,849 bbls.)

Norway (Contd.):

of sperm oil during the 1958/59 season. This season's production was lower by 3,760 tons for whale oil and 6,292 tons of sperm oil as compared with the 1957/58 season.

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FISHERIES TRENDS, 1958:

The failure of the winter herring fishery is the main reason why Norway's 1958 fishery landings were the lowest since 1949. Cod and cod byproducts landings increased from 249,000 metric tons in 1957 to 267,000 tons in 1958.

Production at the herring oil plants decreased sharply in 1958 because of the poor herring catch. In 1958 some 95,000 tons of herring meal and about 35,000 tons of herring oil were produced as compared with 175,000 and 66,000 tons, respectively, the previous year. Exports and stocks on hand decreased markedly.

Exports of canned fish products in 1958 totaled about 28,000 tons or some 5,000 tons below an average year. Decreases were most marked in the exports of smoked herring and brisling. (United States Embassy report from Oslo, February 12.)

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FISHERY LANDINGS, PRODUCTION, AND EXPORTS 1958:

Norwegian fishermen in 1958 landed 1,215,084 metric tons of fish. Landings were 358,808 tons less than in 1957 and 771,216 tons less than in 1956. The 1958 catch was the smallest since 1949 when 1,084,358 tons were landed. The first-hand or vessel value of the landings amounted to 565.7 million kroner (US$79.2 million)--a decline of 61.1 million kroner ($8.6 million) and 145.5 million kroner ($20.4 million) as compared with 1957 and 1956, respectively. The decrease in catch and income aggravated a situation which was difficult even before. The fishermen's organizations have made strong claims for higher prices, rate reliefs, etc. to improve their position.

Exports of fishery products have developed satisfactorily and the stocks are mostly light or normal. The value of the exports is, however, less compared with years of greater landings. Some products, as salted cod, fish-liver oils, and certain canned products, have had to compete with various difficulties or dull markets.

The seasonal runs of herring, cod, and other fish to the coast, will be watched with more intense attention in 1959 than before, because of light landings of winter herring in 1957 and the failure of that fishery in 1958. This brought to mind former periods when the winter herring shoals did not appear on their usual grounds. The two last years the shoals have arrived on late dates and in more northerly positions than usual. The irregularity of this most important fishery has conveyed a feeling of uneasiness to industry circles. A northbound dislocation of the fishing waters may mean that a majority of the industrial plants may find themselves out of place in relation to the fishing center. On the other hand, a late arrival of the run means a short season and most probably also a light catch.

The second mainstay of Norwegian fishing, the resources of Norwegian-Arctic cod, have been heavily taxed by increasing Russian and other European trawler fleets, and Norway's own fishermen have of course also harvested to the limit of their fishing ability. In 1958 and 1957 the Norwegian landings of "skrei" (spawning cod) have been small, while the landings of Finnmark young cod (immature and individually smaller fish on feeding migration) have been quite heavy. After many years of increasing and more intensive exploitation, the yet unanswered question is: What is left of this rich and other less rich year-classes of cod which are due to appear on the spawning grounds in the winter of 1959?

Herring Fisheries: Landings of herring and sprat through 1958 were 613,865 tons with an ex-vessel value of 165.2 million kroner ($23.1 million), compared with 1,019,790 tons and 257.6 million kroner ($36.1 million) in 1957. Neither

Norway (Contd.):

in 1958 nor 1957 were the results of the herring fisheries satisfactory. The utilization of the 1958 landings was (1957 figures in parentheses): iced fresh 34,910 tons (62,638), frozen 40,182 tons (51,344), cured 107,016 tons (108,673), canned 29,972 tons (44,777), reduction 381,449 tons (737,763).

Owing to the scarce winter herring landings in 1958 the exports of fresh iced and frozen herring as well as of other herring products declined. Comparatively, however, exports seem to indicate that the increasing popularity of the frozen product was maintained. Exports of iced herring (mainly winter herring) were 30,080 tons in 1958 as against 57,138 tons in 1957. Frozen herring exports were 34,339 tons and 45,686 tons. Owing to the scarce production of North Sea herring last autumn, it is generally presumed that the 1959 catch of winter herring shall meet with an eager market in Great Britain as on the Continent. This applies to iced as well as to frozen herring.

About 107,000 tons of herring was cured in 1958. Total production was about 850,000 barrels, including 600,000 barrels winter herring, 230,000 barrels Icelandic herring, and 20,000 barrels fat and small herring. Exports were 60,000 tons of salted and 6,880 tons of spiced herring as compared with 62,877 and 6,880 tons in 1957. Of smoked herring (hard cure), which is a product of cured herring, 3,800 tons was exported (1957: 3,917 tons). Cured herring exports included 329,000 barrels winter herring and 26,000 barrels Icelandic herring shipped to Russia. Other important markets were Sweden, German Democratic Republic, Poland, West Germany, and the United States. Of the 1959 production of cured herring 35,000 tons may by agreement be shipped to the Soviet Union. Prices are to be fixed during negotiations which were initiated in the beginning of January 1959, and their level may also constitute a base for the sales to other markets.

Canned Fishery Products: Exports of canned fishery products in 1958 amounted to about 27,500 tons of which 11,040 tons were sild sardines, 5,467 tons brisling sardines, and 5,433 tons kippered herring. The corresponding figures in 1957 were: 31,806; 13,974; 6,071; 5,286. Canned fish products did not move as rapidly as in 1957. Exports of kippers were an exception, and the stocks of that commodity were practically exhausted early in 1959. Exports of brisling sardines were lighter than expected through the last half of 1958. Of the season's production, 195,000 cases or two-thirds of the pack are in stock. Landings, however, reached only 60 percent of an average level. Sild sardines also moved slowly. Stocks of sild sardines in early 1959 were 720,000 cases as compared with 500,000 cases on January 1, 1958.

Byproducts Industry: The reduction plants had supplies through 1958 of 381,449 tons of herring, 91,654 tons of capelin, and 24,888 tons of other fish (including launce or sand eel, mackerel, squid, and fish waste). A total of 88,000 tons of herring meal and 16,000 tons of fish meal were exported as compared with 119,198 tons and 13,807 tons in 1957. Stocks are practically exhausted. The sales prospects are good.

Other Fisheries: Besides herring and sprat, 587,165 tons of other fish were landed in 1958 as against 554,102 tons in 1957. Utilization in 1958 was: iced fresh 95,511 tons, (1957: 102,479), frozen 65,286 tons (48,150), cured (groundfish and roes) 99,472 tons (122,851), dried (unsalted) 175,879 tons (152,660), canned 8,070 tons (13,738), for reduction 141,795 tons (113,545). The cod fisheries and most of the related fisheries developed favorably through 1958.

Exports of Iced Fish: More than 26,000 tons were shipped as compared with 25,555 tons in 1957. On the chief market--British--the demand was unstable, but periodically brisk. Haddock sold well; Norway had a rather big production of halibut this year. Unfortunately the market was somewhat depressed owing to slow moving stocks of frozen halibut produced in 1957 and as time passed also frozen halibut of the 1958 production. Dogfish, which is an important

Norway (Contd.):

Norwegian export article, sold well when the supplies were moderate. Norway's export of tuna (by rail) to Italy was small owing to a failing fishery. Besides, exporters had to accept a lower price because of Japanese competition. Porbeagle and dogfish sold well. The French market bought considerable quantities of iced cod, saithe, pollock, and some dogfish.

Frozen Fish Products: Exports of frozen dressed or round fish were 14,543 tons in 1958 (1957: 7,824) and those of fillets 18,000 tons (17,301).

The year 1958 is described as one of progress for marketing of Norwegian frozen fish products. World consumption of frozen fish obviously is increasing. Norwegian fisheries are, however, an unstable supply source, and only a few of the plants are able to make continuous use of their capacity.

Salted Cod (Klipfish): Owing to reduced export prospects at the end of 1957, producers had to restrict their buying through most of 1958. Exports amounted to about 34,000 tons, compared with 42,128 tons in 1957. Besides 14,000 tons of wet salted groundfish were exported in 1958, including 1,542 tons landed by fishing vessels abroad. The 1957 figures were: 8,159 tons exported plus 1,400 tons landed directly abroad. Estimated stocks of klipfish amount to 10,000 to 12,000 tons early in 1959 as compared with 22,000 tons a year ago.

Stockfish (Dried Unsalted Fish): Exports amounted to more than 37,000 tons, compared with 35,940 tons in 1957. Total raw fish supplies used for stockfish were 176,000 tons in 1958, or about 23,000 tons more than the previous year. Stocks were about 16,000 tons early in 1959, or 3,000 tons larger than on January 1, 1958. The demand from the African, as well as from the Italian markets, has been active and the prospects look the same for 1959. The value of the stockfish exports amounted to about 170 million kroner (23.8 million), or almost one-fifth of all the exported fish products.

Liver and Fish Oils: The markets for fish oils were weak both in 1958 and 1957. The demand for industrial oils and oils suitable for hardening was more active than for medicinal oils. Some stocks are on hand. It has to be noted that the Norwegian production of herring oil and other fish body oils is sold on the inland market for further processing.

Value of Exports: The total value of Norway's exports of fishery products in 1958 amounted to 880 million kroner ($123.2 million), compared with 972 million kroner ($136.1 million) in 1957 and 1,042 million kroner ($145.9 million) in 1956, according to Norwegian Fishing News (vol. V, no. 4, 1958).

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IMPROVED UNDERWATER CAMERA FOR MARINE RESEARCH DEVELOPED:

The Directorate of the Fisheries Ocean Research Institute in Bergen, Norway, has had built a special underwater camera for research use in systematic photographing in oceanic waters. The apparatus is built similarly to those now in use in the United States and Great Britain, but is expected to be more effective in operation. It will be of special importance in Barents Sea research where it will be used by the research vessel G. O. Sars after it has been tested in the Lofot Islands.

The camera is built inside a steel casing with a glass window. The whole outfit weighs only about 286 pounds and can be operated down to a depth of 1,000 meters (about 547 fathoms). Norwegian scientists expect to use the camera to check recordings, especially those of uncertain origin, made with depth-sounders or ASDIC. (Fiskaren, March 4, 1959.)

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PLAN RESEARCH TO LOCATE SUBSURFACE TUNA WITH ASDIC:

During the summer of 1959 Norwegian fisheries scientists will attempt to locate subsurface tuna schools with ASDIC. The first objective will be to obtain clear echograms of tuna so that they can be differentiated from other fish. The

Norway (Contd.):

Ocean Research Institute's research vessel Peder Ronnestad will be used to make the studies off Norway's west coast (Fiskaren, March 4, 1959).

Philippines

CANNED FISH RETAIL AND WHOLESALE PRICES, MARCH 2, 1959:

Retail and wholesale prices on March 2, 1959, for canned sardines and canned salmon in Manila were:

Product	Wholesale	Retail
	48 15-oz. Cans	15-oz. Cans
	US$/Cs.	US¢/Can
Canned Sardines:		
U. S. brand	12.25	27.5-32.5
Japan brand	1/	25.0-27.5
Canned Salmon:	(48 16-oz. Cans)	(16-oz. Cans)
U. S. brands	29.00	67.5-75.0

1/ Not quoted.

Poland

PLANS TO BUILD 54 FACTORYSHIP TRAWLERS BY 1975:

The United Kingdom's lead in factoryship trawler operation was followed by Russia, and now the Poles are following the practice of Russia. The plans of the United Kingdom factoryship trawler Fairtry were basically adopted by Russia into the Pushkin class, of which some 24 vessels have been built and put into operation since 1955.

In 1958 a delegation of two Polish nationals was given the opportunity of gaining practical experience on one of these Russian vessels, the Murmansk, off Labrador. After going out on that vessel they returned on another factoryship, the Zawolzsk. This vessel returned from a 50-day trip with 714 metric tons of dressed ocean perch, plus fish oil and meal. Altogether some 1,100 metric tons of fish were caught and handled during the voyage.

Based on the practical experience thus gained in Russia and on such voyages, Poland has now placed an order in her shipyards for one fish factory vessel with others to follow--54 in the next 15 years.

The first stern trawling vessel planned will have a range of 12,500 miles. Details are: length over-all 277 feet; length between uprights, 244 feet; moulded breadth, 46 feet; draught, 17 feet; main Diesel engine, 2,400 hp.; and speed 12-15 knots.

There will be three refrigerated holds capable of holding up to 640 tons of fillets; another for temporary cooling; and another for storing 160 tons of fish meal; while tanks will be provided for cod-liver oil.

The vessel's capacity will be 50 tons of fresh fish daily and 20 tons of scrap for meal. Personnel will consist of 92 men--11 navigation and deck hands, 17 engineroom, 7 stewards, 12 fishing crew, plus 45 men for the processing plant.

Single and double-berth cabins will be provided. The annual catch is placed at 1,650 tons of fillets, 95 tons of cod-liver oil, and 534 tons of fish meal.

The first factoryship trawler will be handed over in 1960. Plans call for the construction of 15 vessels between 1961-65; 15 vessels, 1966-70; and 23 vessels, 1971-75.

This new type of vessel, states Polish Maritime News, will allow Polish deep-sea fisheries to extend their ranges to waters rich in fish, such as those off Newfoundland, Labrador, the Arctic, and even the South Atlantic near the West African coast. (Fishing News, February 20, 1959.)

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TRAWLER RETURNS FROM FISHING TRIP TO WEST AFRICAN WATERS:

The trial fishing trip to the waters off West Africa by the Polish trawler Jan Turlejski was completed on February 26, 1959. According to the Polish newspaper Trybuna Ludu of February 26, the trawler caught about 10 metric tons of fish, which when sold at Casablanca covered the voyage expenses, and proved that, with proper cold-storage equipment, Polish fishing trawlers can successfully fish mid-Atlantic waters.

Portugal

CANNED FISH EXPORTS, JANUARY-NOVEMBER 1958:

Portugal's exports of canned fish during January-November 1958, amounted to 58,938 metric tons (3,644,800 cases), valued at US$31.4 million as compared with 46,797 tons, valued at US$28.3 million for the same period in 1957. Sardines in olive oil exported during the first 11 months of 1958 amounted to 41,776 tons, valued at US$22.0 million.

Table 1 - Portuguese Canned Fish Exports, January-November 1958

Species	January-November 1958	
	Metric Tons	US$ 1,000
Sardines in olive oil	41,776	21,990
Sardinelike fish in olive oil	5,716	3,888
Sardine & sardinelike fish in brine	1,062	245
Tuna & tunalike fish in olive oil	2,089	1,577
Tuna & tunalike fish in brine	906	466
Mackerel in olive oil	6,478	2,888
Other fish	911	304
Total	58,938	31,358

During January-November 1958, the leading canned fish buyer was Germany with 10,005 tons (valued at US$5.4 million), followed by Italy with 9,567 tons (valued at US$5.0 million), Great Britain with 7,145 tons (valued at US$3.6 million), the United States with 5,608 tons (valued

Portugal (Contd.):

at US$4.0 million), and Belgium-Luxembourg with 4,165 tons (valued at US$2.1 million). Exports to the United States included 2,323 tons of anchovies, 121 tons of tuna, and 2,192 tons of sardines. (Conservas de Peixe, January 1959.)

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FISHERY LANDINGS IN PORTUGAL, MADEIRA, AND THE AZORES, 1957: Landings of fishery products (exclusive of the whale and cod fisheries) in Portugal and the Madeira and Azores Islands in 1957 amounted to 263,805 metric tons valued at US$33.9 million. The quantity landed in 1957 was about 7.2 percent above the total of 246,084 tons landed in 1956 and the value US$33.9 million

Table 1 - Landings of Fish and Shellfish in Portugal, Madeira, and the Azores, 1956 and 1957

	1957			1956		
	Quantity	Value		Quantity	Value	
	Metric Tons	1,000 Escudos	US$ 1,000	Metric Tons	1,000 Escudos	US$ 1,000
Portugal:						
Fish:						
Tuna & similar	1,909	10,580	368	2,918	21,681	754
Anchovy & sprat	7,499	38,146	1,327	5,366	31,929	1,111
Spanish & common mackerel	16,600	27,361	952	16,400	36,142	1,257
Chinchards	39,762	85,907	2,988	42,182	86,367	3,004
Corvina	957	6,878	239	1,228	8,817	307
Sardines	112,554	375,151	13,049	99,827	329,151	11,449
Cachucho & besugo	6,019	19,672	684	6,609	24,214	842
Pargo & common sea bream	11,519	56,555	1,967	11,770	60,429	2,102
Scabbardfish	1,673	8,999	313	2,411	13,024	453
Whiting	11,885	110,410	3,840	10,357	97,120	3,378
Other	28,895	146,194	5,085	27,510	148,176	5,154
Total	239,272	885,853	30,812	226,578	857,050	29,811
Shellfish:						
Crabs, lobsters, & other crustaceous	1,420	20,732	721	1,811	16,443	572
Squid	956	6,404	223	641	4,729	164
Cuttlefish	1,509	6,462	225	1,330	6,288	219
Octopus	650	4,741	165	444	3,566	124
Oysters	491	160	6	1,308	399	14
Other mollusks	2,331	1,697	59	1,937	1,538	53
Total	7,357	40,196	1,399	7,471	32,963	1,146
Fresh-Water Fish	536	4,817	167	485	5,044	175
Total Portugal	247,165	930,866	32,378	234,534	895,057	31,132
Madeira:						
Fish:						
Tuna & similar	2,747	10,243	356	1,068	5,559	193
Spanish mackerel	508	1,242	43	295	874	30
Chinchards	452	1,275	44	448	1,237	43
Pargo & common sea bream	32	207	7	36	220	8
Scabbardfish	877	3,683	128	1,175	4,804	167
Other	949	1,721	60	480	2,043	71
Total	5,565	18,371	638	3,502	14,737	512
Shellfish	16	46	2	22	65	2
Total Madeira	5,581	18,417	640	3,524	14,802	514
Azores:						
Fish:						
Tuna & similar	5,511	12,898	449	2,896	5,994	208
Spanish mackerel	402	1,006	35	194	440	15
Chinchards	3,677	5,125	178	3,395	5,568	194
Sardines	286	884	31	206	753	26
Besugo	10	67	2	7	41	1
Pargo & common sea bream	24	102	4	22	84	3
Other	1,123	4,513	157	1,288	5,046	176
Total	11,033	24,595	856	8,008	17,926	623
Shellfish:						
Crabs, lobsters, & other crustaceous	21	542	19	12	310	11
Other	5	5	2	6	52	2
Total	26	597	21	18	362	13
Total Azores	11,059	25,192	877	8,026	18,288	636
GRAND TOTAL: Portugal, Madeira, and Azores	263,805	974,475	33,895	246,084	928,147	32,282

Portugal (Contd.):

was up about 5 percent from the 1956 value of US$32.3 million.

Note: Values converted at rate of 1,000 escudos equal US$35.

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CANNED FISH PACK, JANUARY-SEPTEMBER 1958:

The total pack of canned fish for January-September 1958 amounted to 35,632 metric tons as compared with 34,011 tons for the same period in 1957. Canned

Table 1 - Portuguese Canned Fish Pack, January-September 1958

Product	Net Weight	Canners' Value
	Metric Tons	US$ 1,000
In Olive Oil:		
Sardines	21,866	12,540
Sardinelike fish	4,100	1,905
Anchovy fillets	2,434	2,064
Tuna	1,580	1,197
Other species (incl. shellfish)	442	286
In Brine:		
Sardinelike fish	4,547	827
Other species	663	182
Total	35,632	19,001

sardines in oil (21,866 tons) accounted for 61.4 percent of the January-September 1958 total pack, higher by 56.0 percent than the pack of 14,016 tons for the same period of 1957, the Conservas de Peixe reported in January 1959.

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FISHERIES TRENDS, NOVEMBER 1958:

Sardine Fishing: During November 1958, the Portuguese fishing fleet landed 26,767 metric tons of sardines (valued at US$1,603,930 ex-vessel or $60 a ton). In November 1957, a total of 18,518 tons of sardines was landed (valued at US$1,956,243 or about US$106 a ton).

Canneries purchased 49.2 percent or 13,159 tons of the sardines (valued at US$868,730 ex-vessel or $66 a ton) during November. Only 343 tons were salted, and the balance of 13,265 tons was purchased for the fresh fish market.

Other Fishing: The November 1958 landings of fish other than sardines were principally 3,253 tons (value US$175,513) of chinchards and 755 tons of anchovies (value US$15,965). (Conservas de Peixe, January 1959.)

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NATIONAL FISH COMMISSION FORMED:

In response to a resolution approved by the recent Fifth National Fisheries Congress, the Portuguese Ministry of Marine has formed a National Commission for the Coordination and Planning of Fishing. Its president will be Captain Henrique Tenreiro and its other members will be delegates representing the various fishing industry associations.

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NEW COD-FISHING VESSEL LAUNCHED:

A new Diesel-engine cod-fishing vessel, the Sao Jacinto, was launched at Aveiro, Portugal, on March 8, 1959. The new vessel is part of the development plan program to increase the Portuguese cod-fishing fleet. The expansion program is making possible substantial savings in foreign exchange expended on salted cod imports.

Spain

VIGO FISHERIES TRENDS, FEBRUARY 1959:

Fish Exchange: Landings of fish and shellfish in February 1959 at the Vigo Fish Exchange amounted to 4,532 metric tons, a drop of 1,314 tons from the preceding month, but higher by 448 tons than the landings for February 1959. Major species sold over the Exchange in February 1959 were: small hake, 1,411 tons; pomfret, 1,215 tons; and horse mackerel, 613 tons. The closed season for sardines began on February 15.

February 1959 landings were valued at US$1,384,000 (US$1.00= 42 pesetas), about $27,000 less than January and close to $477,000 above the value for February 1958. The value this February as compared with the same month of 1958 was up due to higher prices and increased catches of the more expensive varieties.

Fish Canning and Processing: Canners in the Vigo area purchased only 52 tons of fish and shellfish on the Exchange during February 1959. In January 1959 the canners purchased 487 tons. The smoking, drying, and pickling processors

Spain (Contd.):

purchased 14 tons in February and 1,020 tons in January of this year. Canning activity will not pick up again until May or June when catches begin to increase. (United States Consulate, Vigo, dispatch, March 11, 1959.)

Increase Asked on Tinplate Import Duties: Spanish fisheries trade magazines assert that much forethought should be given to increasing duties on imported tinplate and tightening the regulations on temporarily-admitted tinplate. According to the trade journals, Basque representatives are asking for a 100-percent increase in customs duties, a gesture contrary to the European trend to relax customs duties. The articles scoff at assertions that national production will soon meet national consumption demands, and add that if the tinplate to be produced is good in quality and low in price, present low duties will not affect the new industry. If the price is too high and the quality poor, the low customs duties and resultant imports should serve to spur the Spanish producers to compete more effectively.

A Vigo fisheries industrialist commented that the viewpoint taken by high tariff advocates would not win out. In addition, he stated that the "fondo de retorno" import levies of 25 percent would not be applied to tinplate, and that the sales tax on temporarily-admitted tinplate would be rescinded in the near future. He also predicted that no changes would be made on regulations governing temporarily-admitted tinplate, although he did not consider this too important as long as export sales continue to lag.

Standardization of Fish Can Sizes: In February fish canners obtained an interview with the Minister of Industry to discuss problems of interest to the fisheries industry. The immediate result of the interview as observed in Vigo was to refocus attention on the study submitted by the Canners' Union of Galicia to the Government on the standardization of domestic containers. This study (which was approved at a national meeting of cannery interests in 1955) was submitted in 1956 encompassing 12 different sizes of cans with a maximum of eight bases. The technical branch of the Ministry of Industry has now asked for "additional information."

Fish-Canning Industry Reorganization Plans: After a preliminary survey by experts of the National Commission on Productivity in November 1958, the Vigo area fish-canning industry has agreed to a formal survey by the Commission over the next three years.

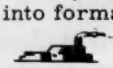
Nine canneries (3 large, 3 medium, 3 small) have been selected for a complete study by the Commission. A small plant which was being torn down for a new railway line will be re-erected as the new pilot plant incorporating the recommendations the Government technicians have made to date.

New Commercial Agreements Include Fishery Products: The new commercial agreement with France, running from November 1, 1958, to October 31, 1959, includes exports to Spain of about US$80,000 worth of dried cod. Spain will ship to France $60,000 worth of fresh fish (except sardines and tuna), $580,000 of dried and salted fish, $75,000 of anchovies, and $385,000 of shellfish. Canned exports to France will amount to $36,000 consisting wholly of mussels.

The payments between the Spanish Foreign Exchange Institute and the National Bank of Bulgaria running between December 2, 1958, and December 1, 1959, includes the shipment to Bulgaria of $200,000 of canned fish products.

Cod Industry's New Labor Regulations: New labor regulations for the growing cod industry were approved by the Ministry of Labor on February 24, effective April 1. The regulations cover vessel personnel and all workers at processing plants with the exception of some higher administrative positions.

The rapid growth of the cod-fishing industry has made it imperative that special applicable labor regulations be drawn up. Preliminary comments are that most of the gains covered in the new law already existed, lacking only to be incorporated into formal legal status.



Sweden

CONTRACTS SIGNED FOR FISHERY PRODUCTS EXPORTS TO EAST GERMANY:

The Swedish West Coast Fish organization in Göteborg signed contracts with an East German government purchasing office in Berlin providing for the export in 1959 to East Germany of 13,750,000 crowns (US$2,658,000) worth of fish products. The terms of the contract make it possible later to enter into supplementary agreements which could increase deliveries to a total value of 16,500,000 crowns (US$3,190,000).

Deliveries under the new agreement were to commence about February 1, 1959. Exports at first will be fresh and frozen herring, later cod, mackerel, and fish fillets, and then salted herring near the end of the year. The demand for salted herring is dropping while the trade in fresh and frozen fish and herring is expanding.

Mackerel are included in the agreement for the first time. The greater interest in this species on the part of the East Germans is attributed to the Swedish West Coast Fish Organization exhibit at the Leipzig Fair in the spring of 1958, where recipes for various frozen and smoked mackerel dishes were demonstrated (the organization is also exhibiting at the Leipzig Fair this year).

The second new feature of the 1959 contract is a variable price schedule which replaces the former fixed price schedule. Under the new scheme prices are quoted weekly and vary within a certain set range, thereby making possible adjustments in keeping with the supply.

At the same time the South Swedish Export Fish organization in Malmo closed a contract with the Berlin purchasing office for the sale in 1959 of fish and fish products valued at 6,000,000 crowns (US$1,160,000), principally herring and cod from the south and east coasts of Sweden. Deliveries in 1958 by this organization were worth about 5,000,000 crowns (US$967,000).

East Germany is Sweden's best fish customer. Efforts are constantly being made, however, to open up new markets because Swedish fishermen report that East German fishing is increasing considerably and they feel that eventually fish exports to East Germany will decline.

East Germany and the Eastern Bloc countries, however, still take more than one-third of the Swedish exports of fish. In this group, exports to Czechoslovakia, which have shown a declining trend in late years, have been helped by the signing in December 1958 by the West Coast Fish Organization of a supplementary agreement for the delivery of additional frozen and salted herring valued at 1,300,000 crowns (US$251,304).

The global compensation arrangement for 1959 governing all trade between Sweden and East Germany has been signed in Berlin. Fish exports by both of the Swedish fish organizations fall under the global agreement. The figure for fish from all of Sweden is said to be the same as in the 1958 agreement, or about 22,500,000 crowns (US$4,350,000).

During 1958 it was difficult at times for the Swedish fish exporting organizations to obtain fish for export under the contracts with East Germany. A contributing factor is the practice of Swedish fishermen who prefer in many cases to land their fish in Hirtshals, Denmark, where they receive an "ore" more per kilo (about 9 U. S. cents a 100 pounds), and also save considerable time because Hirtshals is closer to the fishing grounds than is, for example, Göteborg, Sweden.

The landing of Swedish fish in Danish ports also has had the disadvantage that Danish exporters can include the Swedish fish in their export figures. This could penalize Swedish exporters if at some future time East or West Germany should limit their import of fish to a certain percentage of the previous year's imports. It is expected, however, that the variable price scale incorporated in the 1959 contract will enable the Swedish export organizations to compete favorably with Denmark on a price basis and thus encourage Swedish fishermen to land a greater part of their catches at Swedish fishing ports.

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Sweden (Contd.):

EDIBLE FISH FLOUR TO BE PRODUCED ON COMMERCIAL SCALE:

The first full-scale commercial plant for the production of edible fish flour is being built in Sweden and will come into operation this year, the Food and Agriculture Organization reports.

This development, which was reported early this year to the Food and Agriculture Organization (FAO), Rome, by representatives of the largest pharmaceutical manufacturing company in Sweden, marks a significant step forward in man's effort to produce a cheap and plentiful supply of animal protein.

In the course of developing the flour, the Swedish concern has frequently consulted FAO concerning quality standards, laboratory tests, consumer acceptability, price, and other factors. Now that the product is coming into commercial production the company has asked FAO to cooperate in carrying out acceptability tests in some of the underdeveloped countries.

"We have agreed to do this and the tests will be carried out by our Nutrition Division," stated the Chief of the Fishing Processing Section, Fisheries Division, FAO.

FAO's interest in the production of an edible fish flour was first aroused ten years ago because of the great need for more animal protein in the diet of two-thirds of the world's population of 2,700 million people. Such protein can be supplied through meat, eggs, milk, and fish, but there are various obstacles to the production, distribution, and marketing of these on a scale large enough to meet the needs of the undernourished millions. Fish, which is a very rich natural source of animal protein, offered possibilities if, among other problems, means could be found of transporting at low cost such a perishable commodity to distant markets. One suggestion for overcoming the problem was to process the fish to produce an edible flour. Attention was focused on this possibility and scientists and technicians in many countries have worked on the technical problems. Acceptability tests with edible fish flour have been carried out by FAO and others in Latin America, Africa, and elsewhere. But the problem so far has been to produce an odorless and tasteless flour which, at the same time, retained its animal protein with a high biological value.

The Swedish pharmaceutical manufacturing concern, which is building the flour factory, has perfected a method for producing such a flour, containing 85-percent animal protein, which compares with about 15-percent protein content of fresh fish and meat. This is one of the highest concentrated protein substances yet produced by man and may mark a major victory in the battle to supply the mass of people in the world with sufficient animal protein in their diet.

The new flour can be used in making bread, pasta, cakes, pastries, etc., and can be added to soups and sauces and other foodstuffs. Already in Scandinavia, plans have been made to produce "protein-enriched" bread by including up to 5-percent edible fish flour in the bread. Such an addition adds only a fraction to the cost because the edible fish flour is a little more expensive than wheat or maize flour.

In countries where the lack of animal protein in the diet is particularly severe, a much larger proportion of edible fish flour can be added to the bread, pasta, or other foodstuffs.

The flour is produced in a closed-circuit plant, fresh fish being fed into the plant at one end and the flour being delivered at the other end. Any type of fish can be used, from sharks to sprats. The vast quantities of trash fish which are now delivered to the fish-meal plants and are chiefly used to provide meal for animal food which, in turn, provide eggs and meat for mankind, will be equally suitable for the production of fish flour. This provides a more direct and efficient use of the animal protein for human consumption.

The development of this method of manufacturing edible fish flour is of great practical significance for the underde-

Sweden (Contd.):

veloped countries, and the Swedish concern is planning to establish plants in various parts of the world.

* * * * *

SARDINE CANNERS FACE COMPETITION IN SALES TO SOVIET BLOC:

Swedish sardine canners are troubled about the drop in sales both in domestic and export markets, according to a statement made to the press by the chairman of the Sardine Manufacturers' Association early in March 1959.

Stocks of winter sardines, he said, are large at present (early March). Previously the Swedish canners exported most of the winter sardines to East European countries, principally Czechoslovakia and East Germany, which together took quantities valued up to about US$965,000 (5,000,000 crowns) annually. This year, according to the association's chairman, and also last year there was no interest on the part of Czechoslovakia. As respects East Germany, the barter arrangement provides for sardine exports amounting to US$483,000 (2,500,000 crowns). The chairman describes this item as "only a preliminary arrangement" and asserts that "we have hardly any possibility of selling sardines to that country for the entire value." It is expected that sales this year to East Germany will not exceed one-half that value.

The chairman said it is principally sardines from Portugal that have ruined the domestic market as well as the export markets for Sweden. In addition, raw materials, he said, are so expensive in Sweden that it is difficult to meet competition.

The Swedish sardine canners are, as usual, represented at the Leipzig trade fair. Because of the difficult situation faced by the canners they have sent representatives to Leipzig to solicit orders. The results of these efforts, the chairman said, will be decisive as respects operational possibilities for the Swedish sardine canners during the coming twelve months. (United States Consulate, Goteborg, report of March 10, 1959.)

Taiwan

UNITED STATES LENDS $686,000 TO EXPAND FISHING INDUSTRY:

A $686,000 loan to help expand Taiwan's fishing industry, an important source of food for the island's expanding population, was signed March 18 by officials of the United States Development Loan Fund and the Chinese Embassy.

The loan is expected to help increase the Taiwan fish harvest by 40 to 50 percent. The Land Bank of Taiwan, which is the borrowing agency, will re-lend the money to private individuals and firms in the fishing industry.

The managing Director of the Development Loan Fund explained that fish comprise an important source of protein in Taiwan as the amount of arable land is limited requiring more intensive types of agriculture than the production of meat products. The Island's population is increasing at the rate of 3 percent per year, with a constant stream of refugees from the Chinese mainland adding to the problem.

The loan is divided into four parts, as follows: (1) $298,000 will be used to import Diesel engines, which will permit the fishing boats to stay out longer and cover larger areas; (2) $255,000 will be used to import refrigeration and cold-storage equipment, which will help preserve the catch and permit more orderly handling and marketing; (3) $96,000 will be used in the construction of new fishing boats; and (4) $37,000 will be used to import a specialized seine which will permit a new type of fishing.

The loan will be repayable in Taiwan currency at 5 percent interest in 4½ years.

Tunisia

FISHING INDUSTRY, 1957:

Landings: According to figures released by the Tunisian Department de la Marine et de la Peche (see table 1), the total Tunisian fish catch in 1957 amounted to 14,000 metric tons, valued at 1,960,447 dinars (US$4.7 million). Of

Tunisia (Contd.):

this total, 984 tons were tuna, 53 tons spiny lobster, and 154 tons sponges. Also included in this total was 5,878 tons of sardines, sardinella, and a very small quantity of anchovies. The catch of freshwater fish was about 881 tons, of which 100 tons were eels and the balance dorade, mullet, sole, and loup.

Table 1 - Tunisia's Landings by Type of Fishery, 1957

Fishery	Quantity
	Metric Tons
Coastal	3,642
Trawler	2,439
Night, flare, and seine	5,878
Lake	881
Tuna	984
Spiny lobster	53
Sponge	154
Totals	14,031

Processed Fishery Products: Sardines were canned at some 12 canneries located between Sousse and Mahdia and tuna was canned at Sidi Daoud. There is one cannery for shrimp at Tunis. With the exception of about 5 percent consumed locally, practically the entire catch of 5,878 tons of sardinelike fish is canned or otherwise preserved. The same is true for the 984 tons of tuna. Sixty percent of the sardine and 7 percent of the tuna catch was exported. Most of the spiny lobster catch is exported live to France (principally to the Cote d'Azur) as well as most of the sponge catch.

Vessels and Gear: It is estimated that there are 4,000 fishing craft of all types in Tunisia employing 13,000 fishermen. Of this number, 50 are classified as motor trawlers. Three of these trawlers are the property of the Office National de Peche, a Tunisian Government institution with a monopoly over the fishing in the four Tunisian saline lakes and the spiny lobster fisheries, and which is also engaged in offshore fishing. The Office National de Peche is due to be supplied with four additional trawlers which are being constructed in Italy and are furnished under the United States International Cooperation Administration Aid Program for Tunisia. Only 900 vessels of the estimated total of 4,000 are over 2 tons in size, according to a United States Embassy dispatch from Tunis dated December 2, 1958.

Table 2 - Tunisia's Exports of Fishery Products by Product and Destination, 1957

Fishery	France 1957	Other Countries of Franc Zone 1957	Other Countries 1957	Total 1957	Total 1956
	(Metric Tons)				
Fresh fish	268	440.7	94	802.7	770.3
Salted, dry, and smoked fish	0.2	-	126.5	126.7	204.5
Shellfish	234.7	1.2	38.3	274.2	239.7
Sponges	192.8	0.6	16	209.4	183.1
Preserved fish & shellfish	3,204.9	83.6	1.7	3,290.2	3,386.1

Table 3 - Tunisia's Imports of Fishery Products by Product and Origin, 1957

Product	France 1957	Other Countries of Franc Zone 1957	Other Countries 1957	Total 1957	Total 1956
	(Metric Tons)				
Fresh fish	5	7.8	53.9	66.7	302.8
Salted, dry, & smoked fish	184.4	37.4	46.3	268.1	325.2
Shellfish	97.8	0.7	74.4	172.9	128
Sponges	0.3	-	-	0.3	1.1
Preserved fish & shellfish	37.7	414.3	180.9	632.9	420.9

Union of South Africa

INTENSIVE STUDY UNDER WAY
OF PELAGIC SHOAL FISHING WATERS
OFF SOUTH AFRICAN WEST COAST:

With the new research vessels Sardinops, Trachurus and Kunene, the Union of South Africa Division of Fisheries and the Fisheries Section of the South-West Africa Administration are making the most intensive investigations ever made into the pelagic shoal fishing waters of the southern African west coast. These investigations come under an augmented research program which has been planned for a period of nearly five years. It will more than double previous efforts to probe into the secrets of such shoal fish as the pilchard, maasbanker, and mackerel, and should produce detailed information about the pelagic shoal fishery of the West Coast.

Starting in January, six modern and well-equipped vessels started to range over almost the entire West Coast sweep of the fish-rich Benguela Current. Their range of operation extends to a breadth of 250 miles along 1,000 miles of coastal waters from the southern tip of the Cape north to the mouth of the Kunene River. Manned by some 80 seamen, they will collect and feed information on water and weather conditions, nutrient salts, plankton, and fish to a team of 30 biologists, chemists, and other scientists.

The total value of ships, new and enlarged laboratories and other equipment used in this, the largest research program ever planned for the fishing waters of the Southern Hemisphere, will exceed Ł500,000 (US$1.4 million). The research operations will cost the Union Government and the South-West Africa Administration some Ł100,000 a year (US$280,000).

But the size and scope of the research program are more than matched by the value of the shoal fish to the economies of South and South-West Africa. For 12 years the pilchard and maasbanker have comprised the bulk of the Southern African fish catch and today they support an industry employing thousands of fishermen and factory operators with 300 boats and 19 factories. The investment in this industry is estimated at more than Ł15,000,000 (US$42 million) and each year it produces canned fish, fish meal and fish-body oil valued at about Ł12,000,000 (US$33.6 million). Of the expected total catch of 700,000 tons in 1958, nearly 570,000 tons were pelagic shoal fish--pilchard, maasbanker, mackerel, and snoek.

Fish catching on this scale has, however, stimulated the fear that the resource may be overexploited and for the past eight years fishery scientists have tried to assess the extent of the resource and perhaps to predict the movements of the shoals. Both the Division of Fisheries and the Fisheries Section in South-West Africa have collected and examined considerable data, but the results have been uncertain and the conservation measures at present applied to the industry are arbitrary and have little scientific basis.

Each season the fishery at Walvis Bay is allowed to land 250,000 tons of pilchard; the Cape Fishery is restricted to 250,000 tons of pilchard and maasbanker. These totals may be thousands of tons above or below the maximum safe catch and the absence of adequate scientific management of the resource could jeopardize the whole future of the inshore fishing industry.

Obviously handicapped by lack of funds, the two research organizations did not have sufficient ships or shore facilities to accelerate their investigations and so early in 1954 the industry offered to help finance an augmented program.

This offer was made through the Fisheries Development Corporation of South Africa, Ltd., which was formed in 1944 to promote the rational development of the fishing industry. The Chairman of Corporation, and its Managing Director asked the Director of Fisheries to state his requirements for a comprehensive research program embracing the Union and South-West Africa.

After consultation with the Minister of Economic Affairs and with the South-West Administration, the Director came up with a scheme requiring three new vessels, a field station at Stompneus Bay, and extensions to the Sea Point laboratories of the Division of Fisheries; the Union Government would in return finance the cost of additional crew for the vessels and also ten new scientific posts for the Division of Fisheries. With the cooperation of the South-West Administration, the two fishery research organizations would combine in a coordinated program.

The augmented program called for a capital expenditure of Ł175,000 (almost US$500,000) which was to be advanced in the first instance by the Fisheries Development Corporation. This sum was to bear interest at the rate of 4½ percent a year and would be amortized over 20 years in equal yearly installments. These installments would be met by the Corporation writing off one-fourth of the amount against profits. Thus 25 percent of the total capital cost was to be given by the Corporation as its outright donation towards fishery research. The balance would be obtained by a levy of 2d. (2.3 U. S. cents) a ton for fishermen and 4d. (4.6 U. S. cents) a ton for fish processors on all pilchard, maasbanker, and mackerel landed.

With the new designs for the research vessels and increased building costs over the four years since the preparation of the original scheme, the estimate of Ł175,000 has been substantially exceeded. The final cost of boats and laboratories will be about Ł230,000 (US$644,000), of which Ł115,000 (US$322,000) will cover the cost of the Sardinops, Ł88,000 (US$246,000) for the Trachurus and Kunene and remainder for laboratories. The Corporation will still donate 25 percent of this amount and the levy has already raised Ł30,000 (US$84,000); the payment of interest and the amortization of the loan will extend over an indefinite period.

For this outlay, however, and the additional cost to the South and South-West African research organizations of Ł25,000 (US$70,000) a year, the fishing industry is guaranteed a comprehensive program which ranks among the most important ever made into the pelagic shoal fish and their biological and physico-chemical environment.

The program embraces almost every possible study of the waters of the West Coast and its fish by the three new vessels and three older vessels.

Union of South Africa (Contd.):

In the tight schedule for 1959, the vessels will be allocated to seven different types of cruises. These cruises will keep each ship at sea for up to two-thirds of each month.

The type of cruises will be: long-line cruises, routine area cruises, coastal and pelagic area cruises, tagging cruises, blanket net cruises, predator search cruises, and experimental fishing cruises. (The South African Shipping News and Fishing Industry Review, November 1958.)

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FISHING FLEET REPORTED OFF ALASKA COAST:

A large Russian fishing fleet was reported operating late in March off Alaska's Bristol Bay. The fleet was said to consist of 50 trawlers and auxiliary vessels. Russia's vessels were never reported operating as close to Alaska before, although it is possible for them to have fished the same area before unnoticed. The fleet was reported in international waters some distance from the Alaska coast.

United Kingdom

HUMBER TRAWLER OWNERS CONTRACT TO SELL DIRECT TO PROCESSORS:

The Humber trawler owners have contracted to supply two processing companies (packers of consumer-packaged products) with 1,764,000 pounds of fish between March and July 1959 at fixed prices. This swing towards contract-selling was announced on February 17. Forty percent of the total is to be supplied at Grimsby, and the remainder at Hull.

The two firms have entered into guarantees which will ensure that their contract purchases have the effect of reducing the amount of fish remaining unsold. They have agreed to make their contractual supplies a net addition to their production of quick-frozen consumer products. Furthermore they have undertaken to maintain in 1959 their 1958 level of purchases on the open market.

Asked for his views on the matter, the president of the Hull Fish Merchants' Protection Association, said:

"A huge quantity of fish for two private firms is to be withdrawn before the auctions at a price of some shillings--we believe three (4.2 U. S. cents) per ten-stone kit (140 lbs.) above the minimum, and the fact that this figure is nearly 50 percent more than that obtained from the Russians last year has no bearing on the matter because the distributors agreed to the Russian contract in the national interest, and also because the fish was for export and would not be available to the home market.

"If there is a surplus the fish will be available for these firms to buy quite easily on the open market. If there is no surplus, then the contract is not needed by the producers because the merchants will be standing by to pay them more than the contract price.

"The merchants' fears, quite simply, are that this contract is merely the thin end of the wedge. Once the principle of free auction is departed from, there is no reason why the bulk of the catch should not be diverted at fixed-prices to firms controlled by or closely allied to the vessel owners, with the consequent extinction in the port of Hull alone of nearly 300 businesses.

"In short, if this contract is implemented, it is the considered opinion of the directors of the Association that the death warrant of the distributive side of the industry, as we know it, will have been signed. The only interests to have been served will be those of the producers, and in the longest possible run, possibly not theirs. The Secretary of Hull Trawler Officers' Guild took the view that the proposed contract would be a good thing, so long as the earnings of the trawlermen concerned did not suffer. He said however:

"We think that merchants should always be there. We do not see how the country could be supplied without the independent distributor."

A statement put out by the British Trawlers' Federation says that ample supplies of good quality fish for other sections of the trade and for the country as a whole should be assured, because of: (1) greater catching power of the modernized fleet; (2) contract amounts will be adjusted daily, to leave adequate supplies for auction; (3) total contract quantities are significantly less than last year's supplies to Britain; and (4) no lay-up of vessels before beginning of June, if at all, this year.

Keeping the whole fleet at sea, the Federation stated, means full employment for rank and file dock workers. Marketing is in need of modernization, and contracting is a new method to be explored.

The statement says that experience gained from these two contracts may lead to extension of the scheme, thus offering the prospect of greater stability of prices and supplies, and so promoting home fish consumption to the benefit of the industry.

London fish merchants, fishmongers, and workers are up-in-arms over the new contract sales. Merchants at Billingsgate, however, are awaiting further details before deciding on any steps to counter the owner's action (The Fishing News, February 20, 1959).

Venezuela

JOINT VENEZUELAN-JAPANESE FIRM TO ENGAGE IN TUNA FISHING AND CANNING:

The proposed entry of Japanese interests into the Venezuelan fisheries is about to be realized, according to a March 17, 1959, dispatch from the United States Embassy in Caracas.

A new firm (60 percent Venezuelan and 40 percent Japanese) is being organized to operate a cannery at Cumana and two Japanese tuna boats with crews have already left Japan for Cumana. Sources at the Cumana cannery indicate

Venezuela (Contd.):

that some Venezuelan fishermen will work with the Japanese at sea and the Japanese coming to Venezuela include experts in canning and freezing tuna. The latter will train local personnel in preparing tuna for export.

The new firm will enlarge the cannery. The plant currently imports American tinplate and has facilities to lithograph and shape over a quarter of a million cans per season. Freezing facilities will also be constructed and it is expected that export to the United States will be the primary goal of the new enterprise.

LOBSTER HEARTS USED FOR DRUG-ACTION STUDY

Spiny Lobster hearts may provide scientists with a new tool for studying the action of drugs.

The lobster heart, which contains nine nerve cells, appears to be a near-perfect model that permits the study not only of a single nerve cell in action, but its inter-action with other heart nerve cells.

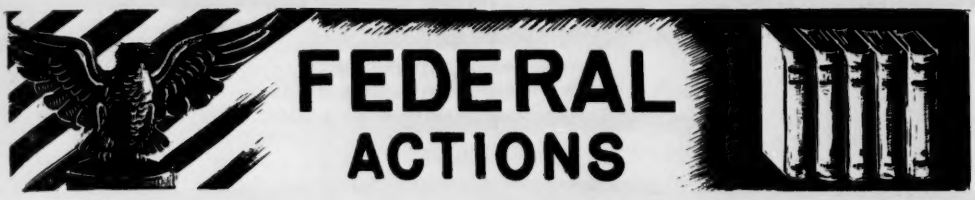
It is for this reason, explains Dr. Donald Maynard of the University of Michigan, that the spiny lobster heart might prove very useful to researchers for watching what happens when drugs, such as curare or barbiturates, reach a neuron. The effect of a drug on a lobster heart could illustrate a possible effect the same drug might have on human nerve cells.

Dr. Maynard, who is studying the growth of lobster heart nerve cells at the Bermuda Biological Station, has had no trouble getting all the hearts he wants. Although this bountiful clawless lobster is a delicacy on the Island, only its tail turns up on the dinner table.

At the same time that he is studying the heart's nerve cells, Dr. Maynard is also probing into the function of the lobster's pericardial organ. This organ is responsible for the release of a very powerful chemical stimulator for the lobster heart.

If Dr. Maynard can discover how this material is released, it could provide a clue to the release mechanism of certain hormones in humans. Science would then have another piece to fit into the jigsaw puzzle of how the human chemical factory works.

--Science News Letter, September 6, 1958



Federal Trade Commission

MEAT MARKETER NOT A PACKER WITH OWNERSHIP OF FEW SHARES:

The Federal Trade Commission ruled on February 20 that a marketer of meat, food, and dairy products charged with violation of laws administered by the Commission does not itself become a meat packer immune from the Commission's jurisdiction merely by acquiring an "infinitesimal" interest in a recognized packer.

The Commission reversed its Hearing Examiner's initial decision which would have dismissed, for lack of jurisdiction, the amended complaint of May 7, 1957, charging a large chain store of Washington, D. C., with inducing discriminatory advertising allowances from its suppliers.

The examiner had held that the Chain's purchase of 100 shares of a packer's common stock after issuance of the complaint made it a packer within the meaning of the Packers and Stockyards Act of 1921 and, therefore, subject to the exclusive jurisdiction of the Secretary of Agriculture. He relied on a clause of the Act which provides that a marketer of these products is a packer if it "owns or controls, directly or indirectly, through stock ownership or control or otherwise . . . any interest" in a packer as defined elsewhere in the statute.

"It thus is clear," the Commission ruled, "that jurisdiction to proceed against practices violative of the national policy expressed in the antitrust laws which may be used by persons subject to the Act for carrying on businesses and commercial pursuits in fields outside or additional to the packing and stockyards industry remains in the Commission. In the instant proceeding, the practices to which the charges of the amended and supplemental complaint pertain are not limited to activities engaged in for carrying on that portion of the business concerned with respondent's over-the-counter sale of meats and dairy and poultry products. They instead relate primarily to practices used for effectuating distribution of the company's products in general. Hence, the Commission has jurisdiction to act in this proceeding."

Note: Also see Commercial Fisheries Review, June 1958, p. 81.

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SEATTLE SEAFOOD BROKER ORDERED TO STOP ILLEGAL BROKERAGE PAYMENTS:

The Federal Trade Commission on March 9, 1959, ordered (7151 Seafood) a Seattle, Wash., primary broker of seafood products to stop illegally passing on its brokerage earnings to customers.

Adopting its Hearing Examiner's initial decision of December 8, 1958, the Commission held that the firm has violated Sec. 2(c) of the Robinson-Patman Amendment to the Clayton Act by granting price concessions, rebates, and allowances in lieu of brokerage.

The Commission's complaint against the firm, which is a partnership, was issued May 20, 1958.

A typical transaction cited by the examiner shows that the partners invoiced 200 cartons of salmon to a chain store at $20.50 a carton. However, they accounted for this sale to their packer principal at $21.00, illegally absorbing the 50¢ per case difference out of their brokerage.

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Department of Health, Education, and Welfare

FOOD AND DRUG ADMINISTRATION

FOOD ADDITIVES REGULATIONS EFFECTIVE:

Regulations on food additives were published by the Food and Drug Administration on March 28, 1959, in the Federal Register. They became effective upon publication. The proposed regulations were published first in the Federal Register of December 9, 1958, and prior to publication of the final regulations consideration was given to the comments received from the public and the food industries.

The regulations cover the following fields: definitions and interpretations; pesticide chemicals in processed foods; substances added to food which are not generally recognized as safe and substances that are generally recognized as safe; tolerances for related food additives; safety factors to be considered; general principles for evaluating the safety of food additives; food additives for which new-drug applications are required; food additives proposed for use in foods for which definitions and standards of identity have been prescribed; food additives for which certification is required; petitions proposing regulations for food additives; withdrawal of petitions without prejudice; substantive amendments to petitions; objections to regulations and requests for hearings; and details on the conduct of hearings, submission of testimony, etc.; procedure for amending and repealing tolerances or exemptions from tolerances; and exemption for investigational use. The regulations as they appear in the Federal Register of March 28, 1959 follow:

Title 21—FOOD AND DRUGS

Chapter I—Food and Drug Administration, Department of Health, Education, and Welfare

SUBCHAPTER B—FOOD AND FOOD PRODUCTS

PART 121—FOOD ADDITIVES

Subpart A—Definitions and Procedural and Interpretative Regulations

By virtue of the authority vested in the Secretary of Health, Education, and Welfare by the Federal Food, Drug, and Cosmetic Act (secs. 409, 701, 72 Stat. 1785, 52 Stat. 1055, as amended 72 Stat. 948; 21 U.S.C. 348, 371), and delegated to the Commissioner of Food and Drugs by the Secretary (23 F.R. 9500), and after having considered all comments on the proposed order published in the FEDERAL REGISTER of December 9, 1958 (23 F.R. 9511), the following regulations are promulgated:

Sec.

AUTHORITY: §§ 121.1–121.75 issued under secs. 409, 701, 52 Stat. 1055, as amended, 72 Stat. 948; 72 Stat. 1784; 21 U.S.C. 348, 371. Interpret or apply secs. 201, 402, 72 Stat. 1784; 21 U.S.C. 321, 342.

§ 121.1 Definitions and interpretations.

(a) "Secretary" means the Secretary of Health, Education, and Welfare.

(b) "Department" means the Department of Health, Education, and Welfare.

(c) "Commissioner" means the Commissioner of Food and Drugs.

(d) As used in this part, the term "act" means the Federal Food, Drug, and Cosmetic Act approved June 25, 1938 (52 Stat. 1040 et seq., as amended; 21 U.S.C. 301–392).

(e) "Food additives" includes all substances not exempted by section 201(s) of the act, the intended use of which results or may reasonably be expected to result, directly or indirectly, either in their becoming a component of food or otherwise affecting the characteristics of food. A material used in the production of containers and packages is subject to the definition if it may reasonably be expected to become a component, or to affect the characteristics, directly or indirectly, of food packed in the container. "Affecting the characteristics of food" does not include such physical effects, as protecting contents of packages, preserving shape, and preventing moisture loss. If there is no migration of a packaging component from the package to the food, it does not become a component of the food and thus is not a food additive. A substance that does not become a component of food, but that is used, for example, in preparing an ingredient of the food to give a different flavor, texture, or other characteristic in the food, may be a food additive.

(f) "Common use in food" refers to consumption of a substance by consumers, regardless of the number of manufacturers who may produce it.

(g) The word "substance" in the definition of the term "food additive" includes a food or food component consisting of one or more ingredients.

(h) "Scientific procedures" include not only original animal, analytical, and other scientific studies, but also an unprejudiced compilation of reliable information, both favorable and unfavorable, drawn from the scientific literature.

(i) "Safe" means that there is convincing evidence which establishes with reasonable certainty that no harm will result from the intended use of the food additive.

§ 121.2 Pesticide chemicals in processed foods.

When pesticide chemical residues occur in processed foods due to the use of raw agricultural commodities that bore

or contained a pesticide chemical in conformity with an exemption granted or a tolerance prescribed under section 408 of the act, the processed food will not be regarded as adulterated so long as good manufacturing practice has been followed in removing any residue from the raw agricultural commodity in the processing (such as by peeling or washing) and so long as the concentration of the residue in the processed food when ready to eat is not greater than the tolerance prescribed for the raw agricultural commodity. But when the concentration of residue in the processed food when ready to eat is higher than the tolerance prescribed for the raw agricultural commodity, the processed food is adulterated unless the higher concentration is permitted by a tolerance obtained under section 409 of the act. For example, if fruit bearing a residue of 7 parts per million of DDT permitted on the raw agricultural commodity is dried and a residue in excess of 7 parts per million of DDT results on the dried fruit, the dehydrated fruit is adulterated unless the higher tolerance for DDT is authorized by the regulations in this part. Food that is itself ready to eat, and which contains a higher residue than allowed for the raw agricultural commodity, may not be legalized by blending or mixing with other foods to reduce the residue in the mixed food below the tolerance prescribed for the raw agricultural commodity.

§ 121.3 Substances added to food which are not generally recognized as safe and substances that are generally recognized as safe.

(a) In general, any substance added to food which has no history of common use as a food ingredient should be regarded as a substance that is not generally recognized as safe for its intended food use, for the purpose of sections 201(s) and 402(a)(2)(C) of the act, unless it has been scientifically tested and shown to be safe.

(b) Section 121.101 contains a partial list of substances that are generally recognized among experts qualified by scientific training and experience to evaluate the safety of such substances as ingredients in food as safe for such use under the conditions set forth in that section. No substance will be removed from this list, nor will the permitted conditions of use be modified, without prior notice and a statement of the reasons for the action.

(c) Substances other than those listed in § 121.101 for which prior sanction or approval under the Federal Food, Drug, and Cosmetic Act has been given, are not listed. Upon written request, setting forth the specific product and a specific usage, the Commissioner will advise interested persons whether such use of such product has been sanctioned or approved. Food additives sanctioned for use in foods for which standards of identity have been prescribed are listed in the standards. Except in the case of an imminent hazard to public health, no prior sanction or approval will be withdrawn or modified without prior notice and a statement of the reasons for the action. Such notice and statement will be sent to the person to whom the sanction or approval was granted and to any other person who has been advised concerning such sanction or approval, if practicable. Otherwise, the notice and statement will be published in the FEDERAL REGISTER.

(d) The Commissioner, upon written request, specifying the intended conditions of use and other pertinent information about a substance, will advise an interested person whether in his opinion the substance is a food additive.

(e) The training and experience necessary to qualify experts to evaluate the safety of food additives, for the purposes of section 201(s) of the act, are sufficient training and experience in biology, medicine, pharmacology, physiology, toxicology, veterinary medicine, or other appropriate science to recognize and evaluate the behavior and effects of chemical substances in the diet of man and of animals.

§ 121.4 Tolerances for related food additives.

(a) Food additives that cause similar or related pharmacological effects will be regarded as a class, and in the absence of evidence to the contrary, as having additive toxic effects and will be considered as related food additives.

(b) Tolerances established for such related food additives may limit the amount of a common component that may be present, or may limit the amount of biological activity (such as cholinesterase inhibition) that may be present, or may limit the total amount of related food additives that may be present.

(c) Where food additives from two or more chemicals in the same class are present in or on a food, the tolerance for the total of such additives shall be the same as that for the additive having the lowest numerical tolerance in this class, unless there are available methods that permit quantitative determination of the amount of each food additive present or unless it is shown that a higher tolerance is reasonably required for the combined additives to accomplish the physical or technical effect for which such combined additives are intended and that the higher tolerance will be safe.

(d) Where residues from two or more additives in the same class are present in or on a food and there are available methods that permit quantitative determination of each residue, the quantity of combined residues that are within the tolerance may be determined as follows:

(1) Determine the quantity of each residue present.

(2) Divide the quantity of each residue by the tolerance that would apply if it occurred alone, and multiply by 100 to determine the percentage of the permitted amount of residue present.

(3) Add the percentages so obtained for all residues present.

(4) The sum of the percentages shall not exceed 100 percent.

§ 121.5 Safety factors to be considered.

In accordance with section 409(c)(5)(C) of the act, the following safety factors will be applied in determining whether the proposed use of a food additive will be safe: Except where evidence is submitted which justifies use of a different safety factor, a safety factor in applying animal experimentation data to man of 100 to 1, will be used; that is, a food additive for use by man will not be granted a tolerance that will exceed 1/100th of the maximum amount demonstrated to be without harm to experimental animals.

§ 121.6 General principles for evaluating the safety of food additives.

(a) In reaching a decision on any petition filed under section 409 of the act, the Commissioner will give full consideration to the specific biological properties of the compound and the adequacy of the methods employed to demonstrate safety for the proposed use, and the Commissioner will be guided by the principles and procedures for establishing the safety of food additives stated in current publications of the National Academy of Sciences-National Research Council. A petition will not be denied, however, by reason of the petitioner's having followed procedures other than those outlined in the publications of the National Academy of Sciences-National Research Council if, from available evidence, the Commissioner finds that the procedures used give results as reliable as, or more reliable than, those reasonably to be expected from the use of the outlined procedures. In reaching a decision, the Commissioner will give due weight to the anticipated levels and patterns of consumption of the additive specified or reasonably inferable. For the purposes of this section, the principles for evaluating safety of additives set forth in the above-mentioned publications will apply to any substance that may properly be classified as a food additive as defined in section 201(s) of the act.

(b) Upon written request describing the proposed use of an additive and the proposed experiments to determine its safety, the Commissioner will advise a person who wishes to establish the safety of a food additive whether he believes the experiments planned will yield data adequate for an evaluation of the safety of the additive.

§ 121.7 Food additives or pesticide chemicals for which new-drug applications are required.

(a) A substance that is a new drug within the meaning of section 201(p) of the act may also be a food additive within the meaning of section 201(s) by reason of the fact that its intended use results or may reasonably be expected to result, directly or indirectly, in its or its ingredients' conversion products becoming a component or otherwise affecting the characteristics of a food. When an application for a new drug that is intended for administration to a food-producing animal is submitted, it will also be evaluated under section 408 or 409 of the act (giving due consideration to data previously filed by the applicant) when there is a reasonable possibility that a residue of the drug may be present or otherwise affect the characteristics of the edible products of such animals, and a regulation issued where necessary. Where a substance is both a new drug and a food additive, the submission of a new-drug application in accordance with the regulations appearing in Part 130 of this chapter will also be construed as a petition for the establishment of a regulation for the use of the substance as a food additive. A new-drug application will not be permitted to become effective for a use that results in the substance becoming a food additive until a regulation is established under section 408 or 409 of the act. A food-additive regulation under section 409 of the act will not be established when the additive results from the use of a new drug for which

a new-drug application cannot be made effective. The new-drug application and the establishment of a regulation respecting the food additive or pesticide chemical use will be acted upon simultaneously.

(b) With respect to those uses of a new drug that result in its becoming a food additive, the provisions of these regulations shall apply concerning the procedure to be followed in establishing a food-additive regulation. Upon determination that a new-drug application contains a petition for the establishment of a food-additive regulation, the New Drug Branch of the Food and Drug Administration shall so notify the applicant prior to the effective date of the application, and shall inform him that his application with respect to the uses of the new drug which result in its becoming a food additive will be processed under the regulations in this part. Upon the issuance of the food-additive regulation, the New Drug Branch will notify the applicant that his application is effective to the extent allowed by the regulation. In the event the proceeding for the food-additive regulation results in the denial of a regulation allowing the use of the new drug as a food additive, the applicant shall be notified that the refusal to permit his new-drug application to become effective is final with respect to the use of the new drug for uses resulting in its becoming a food additive.

§ 121.8 Food additives proposed for use in foods for which definitions and standards of identity have been prescribed.

(a) Where a petition is received for the issuance or amendment of a regulation establishing a definition and standard of identity for a food under section 401 of the act, which proposes the inclusion of a food additive in such definition and standard of identity, the provisions of the regulations in this part shall apply with respect to the information that must be submitted with respect to the food additive. Since section 409(b)(5) of the act requires that the Secretary publish notice of a petition for the establishment of a food-additive regulation within 30 days after filing, notice of a petition relating to a definition and standard of identity shall also be published within that time limitation if it includes a request, so designated, for the establishment of a regulation pertaining to a food additive.

(b) If a petition for a definition and standard of identity contains a proposal for a food-additive regulation, and the petitioner fails to designate it as such, the Commissioner, upon determining that the petition includes a proposal for a food-additive regulation, shall so notify the petitioner and shall thereafter proceed in accordance with the regulations in this part.

(c) A regulation will not be issued allowing the use of a food additive in a food for which a definition and standard of identity is established, unless its issuance also complies with section 401 of the act.

§ 121.9 Food additives for which certification is required.

(a) An antibiotic drug that is subject to the certification requirements of sections 502(l) and 507 of the act may also be a food additive within the meaning of section 201(s), by reason of the fact that its intended use results or may reasonably by expected to result, directly or indirectly, in it, its ingredients, or conversion products becoming components of or otherwise affecting the characteristics of a food. Any such drug that is intended for administration to a food-producing animal will also be evaluated under section 408 or section 409 (giving due consideration to data previously filed by the applicant) when there is a reasonable possibility that a residue of the drug may be present or otherwise affect the characteristics of the edible products of such animals and a regulation issued where necessary. Where a substance is both a certifiable drug and a food additive, the submission of the information required by the regulations appearing in Parts 146, 146a, 146b, 146c, 146d, and 146e of this chapter will also be construed as a petition for the establishment of a regulation for the use of the substance as a food additive. An antibiotic application will not be permitted to become effective for a use that results in the substance becoming a food additive until a regulation is established under section 408 or section 409 of the act. The antibiotic application and the establishment of a regulation respecting the food additive use will be acted upon simultaneously.

(b) With respect to those uses of an antibiotic drug that result in its becoming a food additive, the provisions of the regulations in this part shall apply concerning the procedure to be followed in establishing a food-additive regulation. Upon determination that an antibiotic application contains a petition for the establishment of a food-additive regulation, the Division of Antibiotics of the Food and Drug Administration shall so notify the applicant prior to the effective date of the application and shall inform him that his application with respect to the uses of the antibiotic which result in its becoming a food additive will be processed under the regulations in this part. Upon the issuance of a food-additive regulation, the Division of Antibiotics will notify the applicant that his application is effective to the extent allowed by the regulation. In the event the proceeding for the food-additive regulation results in the denial of a regulation allowing the use of the antibiotic drug as a food additive, the applicant shall be notified that the denial of his antibiotic application is final with respect to the use of such drug for use resulting in its becoming a food additive.

§ 121.51 Petitions proposing regulations for food additives.

(a) Petitions to be filed with the Commissioner under the provisions of section 409(b) of the act shall be submitted in triplicate. If any part of the material submitted is in a foreign language, it shall be accompanied by an accurate and complete English translation. The petition shall state petitioner's post-office address to which published notices or orders issued or objections filed pursuant to section 409 of the act may be sent.

(b) Pertinent information may be incorporated in, and will be considered as part of, a petition on the basis of specific reference to such information submitted to and retained in the files of the Food and Drug Administration. However, any reference to unpublished information furnished by a person other than the applicant will not be considered unless use of such information is authorized in a written statement signed by the person who submitted it. Any reference to published information offered in support of a food-additive petition should be accompanied by reprints or photostatic copies of such references.

(c) Petitions shall include the following data and be submitted in the following form:

_____
(Date)

Name of petitioner _____
Post-office address _____
Date _____
Name of food additive and proposed use _____
_____
_____

FOOD AND DRUG ADMINISTRATION,
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
Washington 25, D.C.

DEAR SIRS:

The undersigned, _____, submits this petition pursuant to section 409(b)(1) of the Federal Food, Drug, and Cosmetic Act with respect to _____
_____
(Name of the food additive and proposed use)

Attached hereto, in triplicate, and constituting a part of this petition, are the following:

A. The name and all pertinent information concerning the food additive, including chemical identity and composition of the food additive, its physical, chemical, and biological properties, and specifications prescribing the minimum content of the desired component(s) and identifying and limiting the reaction byproducts and other impurities. Where such information is not available, a statement as to the reasons why it is not should be submitted.

When the chemical identity and composition of the food additive is not known, the petition shall contain information in sufficient detail to permit evaluation regarding the method of manufacture and the analytical controls used during the various stages of manufacturing, processing, or packing of the food additive which are relied upon to establish that it is a substance of reproducible composition. Alternative methods and controls and variations in methods and controls within reasonable limits that do not affect the characteristics of the substance or the reliability of the controls may be specified.

If the food additive is a mixture of chemicals, the petition shall supply a list of all substances used in the synthesis, extraction, or other method of preparation, regardless of whether they undergo chemical change in the process. Each substance should be identified by its common English name and complete chemical name, using structural formulas when necessary for specific identification. If any proprietary preparation is used as a component, the proprietary name should be followed by a complete quantitative statement of composition. Reasonable alternatives for any listed substance may be specified.

If the petitioner does not himself perform all the manufacturing, processing, and packing operations for a food additive, the petition shall identify each person who will perform a part of such operations and designate the part.

The petition shall include stability data, and, if the data indicate that it is needed to insure the identity, strength, quality, or purity of the additive, the expiration date that will be employed.

B. The amount of the food additive proposed for use and the purposes for which it is proposed, together with all directions, recommendations, and suggestions regarding the proposed use, as well as specimens of the

labeling proposed for the food additive and any labeling that will be required by applicable provisions of the Federal Food, Drug, and Cosmetic Act on the finished food by reason of the use of the food additive. If the additive results or may reasonably be expected to result from the use of packaging material, the petitioner shall show how this may occur and what residues may reasonably be anticipated.

(Typewritten or other draft-labeling copy will be accepted for consideration of the petition, provided a statement is made that final printed labeling identical in content to the draft copy will be submitted as soon as available and prior to the marketing of the food additive.

If the food additive is one for which a tolerance limitation is required to assure its safety, the level of use proposed should be no higher than the amount reasonably required to accomplish the intended physical or other technical effect, even though the safety data may support a higher tolerance.)

C. Data establishing that the food additive will have the intended physical or other technical effect or that it may reasonably be expected to become a component, or to affect the characteristics, directly or indirectly, of food and the amount necessary to accomplish this. These data should include information in sufficient detail to permit evaluation with control data.

D. A description of practicable methods to determine the amount of the food additive in the raw, processed, and/or finished food and of any substance formed in or on such food because of its use. The test proposed shall be one that can be used for food-control purposes and that can be applied with consistent results by any properly equipped and trained laboratory personnel.

E. Full reports of investigations made with respect to the safety of the food additive.

(A petition may be regarded as incomplete unless it includes full reports of adequate tests reasonably applicable to show whether or not the food additive will be safe for its intended use. The reports ordinarily should include detailed data derived from appropriate animal and other biological experiments in which the methods used and the results obtained are clearly set forth. The petition shall not omit without explanation any reports of investigations that would bias an evaluation of the safety of the food additive.)

F. Proposed tolerances for the food additive, if tolerances are required in order to insure its safety. A petitioner may include a proposed regulation.

G. If submitting petition to modify an existing regulation issued pursuant to section 409(c)(1)(A) of the act, full information on each proposed change that is to be made in the original regulation must be submitted. The petition may omit statements made in the original petition concerning which no change is proposed. A supplemental petition must be submitted for any change beyond the variations provided for in the original petition and the regulation issued on the basis of the original petition.

Yours very truly,

Petitioner ----------

By ----------

(Indicate authority)

(d) The petitioner will be notified of the date on which his petition is filed; and an incomplete petition, or one that has not been submitted in triplicate, will usually be retained but not filed as a petition under section 409 of the act. The petitioner will be notified in what respects his petition is incomplete.

(e) The petition must be signed by the petitioner or by his attorney or agent, or (if a corporation) by an authorized official.

(f) The data specified under the several lettered headings should be submitted on separate sheets or sets of sheets, suitably identified. If such data have already been submitted with an earlier application, the present petition may incorporate it by specific reference to the earlier. If part of the data have been submitted by the manufacturer of the food additive as a master file, the petitioner may refer to the master file if and to the extent he obtains the manufacturer's written permission to do so. The manufacturer may authorize specific reference to the data without disclosure to the petitioner. Nothing herein shall prevent reference to published data.

(g) A petition shall be retained but shall not be filed if any of the data prescribed by section 409(b) of the act are lacking or are not set forth so as to be readily understood.

(h) Data in a petition regarding any method or process entitled to protection as a trade secret will be held confidential and not revealed unless it is necessary to do so in the record of an administrative hearing preliminary to judicial proceedings under section 409 of the act. Other data in the petition will not be revealed to persons other than the petitioner and persons engaged in the enforcement of the act beyond that which is necessary to comply with section 409(b)(5) (notice of the regulation proposed) and 409(c)(1) (order acting on the petition).

(i)(1) Except where the petition involves a new drug, within 15 days after receipt, the Commissioner will notify the petitioner of acceptance or nonacceptance of a petition, and if not accepted the reasons therefor. If accepted, the date of the notification letter sent to petitioner becomes the date of filing for the purposes of section 409(b)(5) of the act. If the petitioner desires, he may supplement a deficient petition after being notified regarding deficiencies. If the supplementary material or explanation of the petition is deemed acceptable, petitioner shall be notified. The date of such notification becomes the date of filing. If the petitioner does not wish to supplement or explain the petition and requests in writing that it be filed as submitted, the petition shall be filed and the petitioner so notified. The date of such notification becomes the date of filing. Where the petition involves a new drug, notification to the petitioner will be made within 30 days.

(2) The Commissioner will publish in the FEDERAL REGISTER within 30 days from the date of filing of such petition, a notice of the filing, the name of the petitioner, and a brief description of the proposal in general terms. In the case of a food additive which becomes a component of food by migration from packaging material, the notice shall include the name of the migratory substance, and where it is different from that of one of the original components, the name of the parent component, the maximum quantity of the migratory substance that is proposed for use in food, and the physical or other technical effect which the migratory substance or its parent component is intended to have in the packaging material. A copy of the notice will be mailed to the petitioner when the original is forwarded to the FEDERAL REGISTER for publication.

(j) The Commissioner may request a full description of the methods used in, and the facilities and controls used for, the production of the food additive, or a sample of the food additive, articles used as components thereof, or of the food in which the additive is proposed to be used, at any time while a petition is under consideration. The Commissioner shall specify in the request for a sample of the food additive, or articles used as components thereof, or of the food in or on which the additive is proposed to be used, a quantity deemed adequate to permit tests of analytical methods to determine quantities of the food additive present in foods for which it is intended to be used or adequate for any study or investigation reasonably required with respect to the safety of the food additive or the physical or technical effect it produces. The data used for computing the 90-day limit for the purposes of section 409(c)(2) of the act shall be moved forward 1 day for each day after the mailing date of the request taken by the petitioner to submit the sample. If the information or sample is requested a reasonable time in advance of the 180 days, but is not submitted within such 180 days after filing of the petition, the petition will be considered withdrawn without prejudice.

(k) The Commissioner will forward for publication in the FEDERAL REGISTER, within 90 days after filing of the petition (or within 180 days if the time is extended as provided for in section 409(c)(2) of the act), a regulation prescribing the conditions under which the food additive may be safely used (including, but not limited to, specifications as to the particular food or classes of food in or on which such additive may be used, the maximum quantity that may be used or permitted to remain in or on such food, the manner in which such additive may be added to or used in or on such food, and any directions or other labeling or packaging requirements for such additive deemed necessary by him to assure the safety of such use), and prior to the forwarding of the order to the FEDERAL REGISTER for publication shall notify the petitioner of such order and the reasons for such action; or by order deny the petition, and shall notify the petitioner of such order and of the reasons for such action.

(l) If the Commissioner determines that additional time is needed to study and investigate the petition, he shall by by written notice to the petitioner extend the 90-day period for not more than 180 days after the filing of the petition.

§ 121.52 Withdrawal of petitions without prejudice.

(a) In some cases the Commissioner will notify the petitioner that the petition, while technically complete, is inadequate to justify the establishment of a regulation or the regulation requested by petitioner. This may be due to the fact that the data are not sufficiently clear or complete. In such cases, the petitioner may withdraw the petition pending its clarification or the obtaining of additional data. This withdrawal will be without prejudice to a future filing. Upon refiling, the time limitation will begin to run anew from the date of refiling.

(b) At any time before the order provided for in § 121.51(k) has been forwarded to the FEDERAL REGISTER for publication, the petitioner may withdraw the petition without prejudice to a future filing. Upon refiling, the time limitation will begin to run anew.

§ 121.53 Substantive amendments to petitions.

After a petition has been filed, the petitioner may submit additional information or data in support thereof. In such cases, if the Commissioner determines that the additional information or data amounts to a substantive amendment, the petition as amended will be given a new filing date, and the time limitation will begin to run anew.

§ 121.54 Effective date.

A regulation published in accordance with § 121.51(k) shall become effective upon publication in the FEDERAL REGISTER.

§ 121.55 Objections to regulations and requests for hearings.

(a) Objections to an order promulgated pursuant to section 409(f)(1), of the act shall be submitted in quintuplicate to the Hearing Clerk of the Department at the address specified in such order. Each objection to a provision of the regulation shall be separately numbered.

(b) A statement of objections shall not be accepted for filing if:

(1) It is received for filing more than 30 days after the date of publication of the order in the FEDERAL REGISTER.

(2) It fails to establish that the objector will be adversely affected by the regulation.

(3) It does not specify with particularity the provisions of the regulation to which objection is taken.

(4) It does not state reasonable grounds for each objection raised. Grounds that it is reasonable to conclude are capable of being established by reliable evidence at the hearing, and which if proved would call for changing the provisions specified in the objections, will be deemed reasonable grounds.

(c) If the statement of objections may must be filed, the Commissioner shall inform the objector of the reasons.

(d) If objections to a regulation issued pursuant to the filing of a petition are filed by a person other than the petitioner, the Food and Drug Administration shall send a copy of the objections by certified mail to the petitioner at the address given in the petition. Petitioner shall have 2 weeks from the date of receipt by him of the objections to make written reply.

§ 121.56 Public hearing; notice.

If the objections and statements filed by any person, when they are considered with the record in the proceeding (including any reply to the objections that the petitioner may have filed), show that the person filing the objections is adversely affected and that the grounds stated in support of the objections are reasonable, and a public hearing on the objections is requested, the Commissioner shall cause to be published in the FEDERAL REGISTER a notice reciting the objections and announcing a public hearing to receive evidence on them. The notice shall designate the place where the hearing will be held, specify the time within which appearances must be filed, and specify the time (not earlier than 30 days after the date of publication of the notice in the FEDERAL REGISTER) when the hearing will commence. The hearing will convene at the place and time announced in the notice, but thereafter it may be moved to a different place and may be continued from day to day or recessed to a later day without other notice than announcement thereof by the presiding officer at the hearing. Included in such notice shall be a statement indicating whether the regulation to which objection was taken shall be stayed pending the outcome of the hearing.

§ 121.57 Presiding officer.

The hearing shall be conducted by a presiding officer, who shall be a hearing examiner appointed as provided in the Administrative Procedure Act (sec. 11, 60 Stat. 244, as amended; 5 U.S.C. 1010 et seq.) and designated by the Commissioner for conducting the hearing. Any such designation may be made or revoked by the Commissioner at any time. Hearings shall be conducted in an informal but orderly manner in accordance with the regulations in this part and the requirements of the Administrative Procedure Act. The presiding officer shall have the power to administer oaths and affirmations, to rule upon offers of proof and admissibility of evidence, to receive relevant evidence, to examine witnesses, to regulate the course of the hearing, to hold conferences for the simplification of the issues, and to dispose of procedural requests, but he shall not have power to decide any motion that involves final determination of the merits of the proceeding.

§ 121.58 Parties; burden of proof; appearances.

At the hearing, the person whose objections raised the issues to be determined shall be, within the meaning of section 7(c) of the Administrative Procedure Act, the proponent of the order sought, and accordingly shall have the burden of proof. Any interested person shall be given an opportunity to appear at the hearing, either in person or by his authorized representative, and to be heard with respect to matters relevant to the issues raised by the objections. Any interested person who desires to be heard at the hearing in person or through a representative shall, within the time specified in the notice of hearing, file with the presiding officer a written notice of appearance setting forth his name, address, and employment. If such person desires to be heard through a representative, such person or such representative shall file with the presiding officer a written appearance setting forth the name, address, and employment of such person. Any person or representative shall state with particularity in the notice of appearance his interest in the proceeding and shall set forth the specific provisions of the regulation concerning which objections have been made on which such person desires to be heard. The notice of appearance shall also set forth with particularity the position to be taken concerning the objections on which he wishes to be heard. No person shall be heard if he failed to file notice of his appearance within the time prescribed, in the absence of a clear showing of good cause why the notice of appearance was not filed. All present at the hearing shall conform to all reasonable standards of orderly and ethical conduct.

§ 121.59 Request for stay of effectiveness of regulation pending a hearing.

When a hearing is requested under § 121.55, the request may also include a request for a stay of effectiveness of the order, in whole or in part, which request shall include the reasons for the stay together with a showing that the stay involves no hazard to the public health.

§ 121.60 Prehearing and other conferences.

(a) The presiding officer, on his own motion or on the motion of any party or his representative, may direct all parties or their representatives to appear at a specific time and place for a prehearing conference to consider:

(1) The simplification of the issues.

(2) The possibility of obtaining stipulations, admissions of facts, and documents.

(3) The possibility of the limitation of the number of witnesses.

(4) The scheduling of witnesses to be called.

(5) The advance submission of all documentary evidence.

(6) Such other matters as may aid in the disposition of the proceeding.

The presiding officer shall make an order reciting the action taken at the conference, the agreements made by the parties or their representatives, and the scheduling of witnesses, and limiting the issues for hearing to those not disposed of by admissions or agreements. Such order shall control the subsequent course of the proceeding unless modified for good cause by subsequent order.

(b) The presiding officer may also direct all parties and their representatives to appear at conferences at any time during the hearing with a view to simplification, clarification, or shortening of the hearing.

§ 121.61 Submission of documents in advance of hearing.

(a) All documents to be offered at the hearing shall be submitted to the presiding officer and to the interested parties sufficiently in advance of the offer of such documents for introduction into the record to permit study and preparation of cross-examination and rebuttal evidence.

(b) The presiding officer, after consultation with the parties at a conference called in accordance with § 121.60, shall make an order specifying the time at which documents shall be submitted. He shall also specify in his order the time within which objection to the authenticity of such documents must be made to comply with paragraph (d) of this section.

(c) Documents not submitted in advance in accordance with the requirements of paragraphs (a) and (b) of this section shall not be received in evidence in the absence of a clear showing that the offering party had good cause for his failure to produce the documents sooner.

(d) The authenticity of all documents submitted in advance shall be deemed admitted unless written objection thereto is filed with the presiding officer upon notice to the other parties within the time specified by the presiding officer in accordance with paragraph (b) of this section, except that a party will be permitted to challenge such authenticity at a later time upon a clear showing of good cause for failure to have filed such written objection.

§ 121.62 Excerpts from documents.

When portions only of a document are

to be relied upon, the offering party shall prepare the pertinent excerpts, adequately identified, and shall supply copies of such excerpts, together with a statement indicating the purpose for which such materials will be offered, to the presiding officer and to the other parties. Only the excerpts, so prepared and submitted, shall be received in the record. However, the whole of the original document should be made available for examination and for use by opposing counsel for purposes of cross-examination.

§ 121.63 Submission and receipt of evidence.

(a) Each witness shall, before proceeding to testify, be sworn or make affirmation.

(b) When necessary to prevent undue prolongation of the hearing, the presiding officer may limit the number of times any witness may testify, the repetitious examination and cross-examination of witnesses, or the amount of corroborative or cumulative evidence.

(c) The presiding officer shall admit only evidence which is relevant, material, and not unduly repetitious.

(d) Opinion evidence shall be admitted when the presiding officer is satisfied that the witness is properly qualified.

(e) The presiding officer shall file as an exhibit a copy of the FEDERAL REGISTER promulgating the regulation to which objections were taken and the objections that form the basis for the hearing. All documents constituting the record bearing on the point in controversy, and not entitled to protection under section 301(j) of the act, accumulated up to the start of the hearing shall be open for inspection by interested persons during office hours in the office of the Hearing Clerk of the Department, Room 5440, 330 Independence Avenue SW., Washington 25, D.C.

(f) If any person objects to the admission or rejection of any evidence or to other limitation of the scope of any examination or cross-examination, he shall state briefly the grounds for such objection, and the transcript shall not include extended argument or debate thereon except as ordered by the presiding officer. A ruling of the presiding officer on any such objection shall be a part of the transcript, together with such offer of proof as has been made.

§ 121.64 Transcript of the testimony.

Testimony given at a public hearing shall be reported verbatim. All written statements, charts, tabulations, and similar data offered in evidence at the hearing shall be marked for identification and, upon a showing satisfactory to the presiding officer of their authenticity, relevancy, and materiality, shall be received in evidence subject to the Administrative Procedure Act (sec. 7(c), 60 Stat. 238; 5 U.S.C. 1006(c)). Exhibits shall if practicable, be submitted in quintuplicate. In case the required number of copies are not made available, the presiding officer shall exercise his discretion in determining whether said exhibit shall be read in evidence or whether additional copies shall be required to be submitted within a time to be specified by the presiding officer. Where the testimony of a witness refers to a statute, or to a report or document, the presiding officer shall, after inquiry relating to the identification of such statute, report, or document, determine whether the same shall be produced at the hearing and physically be made a part of the evidence by reference. Where relevant and material matter offered in evidence is embraced in a report or document containing immaterial and irrelevant matter, such immaterial and irrelevant matter shall be excluded and shall be segregated insofar as practicable, subject to the direction of the presiding officer.

§ 121.65 Oral and written arguments.

(a) Unless the presiding officer issues an announcement at the hearing authorizing oral argument before him, it shall not be permitted.

(b) The presiding officer shall announce at the hearing a reasonable period within which interested persons may file written arguments based solely upon the evidence received at the hearing, citing the pages of the transcript of the testimony or properly identified exhibits where such evidence occurs.

§ 121.66 Indexing of record.

(a) Whenever it appears to the presiding officer that the record of hearing will be of such length that an index to the record will permit a more orderly analysis of the evidence and reduce delay, the presiding officer shall require counsel for the parties to prepare a daily topical index, which will be available to the presiding officer and all parties. Preparation of such an index shall be apportioned among all counsel present in such manner as appears just and proper in the circumstances.

(b) The index shall include each topic of testimony upon which evidence is taken, the name of each witness testifying upon the topic, the page of the record at which each portion of his testimony appeared, and the number of each exhibit relating to the topic. The index shall also contain the name of each witness, followed by the topics upon which he testified and the page of the record at which such testimony appears.

§ 121.67 Certification of record.

At the close of the hearing, the presiding officer shall afford witnesses and their counsel a short time (not longer than 30 days, except in unusual cases) in which to point out errors that may have been made in transcribing the testimony. The presiding officer shall promptly thereafter order such corrections made as in his judgment are required to make the transcript conform to the testimony, and he shall certify the transcript of testimony and the exhibits to the Commissioner.

§ 121.68 Filing the record of the hearing.

As soon as practicable after the close of the hearing, the complete record of the hearing shall be filed in the office of the Hearing Clerk. The record shall include the transcript of the testimony, all exhibits, and any written arguments that may have been filed.

§ 121.69 Copies of the record of the hearing.

The Department will make provision for a stenographic record of the testimony and for such copies of the transcript thereof as it requires for its own purposes. Any person desiring a copy of the record of the hearing or of any part thereof shall be entitled to the same upon payment of the costs thereof.

§ 121.70 Proposed order after public hearing.

As soon as practicable after the time for filing written arguments has ended, the Commissioner shall prepare and cause to be published in the FEDERAL REGISTER a proposed order which shall set forth in detail the findings of fact and conclusions, and recommend decision on the objections that were the subject of the hearing and tentative regulations. The proposed order shall specify a reasonable time, ordinarily not to exceed 60 days, within which any interested person may file exceptions. The exceptions shall point out with particularity the alleged errors in said proposed order and shall contain a specific reference to the pages of the transcript of the testimony or to the exhibits on which each exception is based. Such exceptions may be accompanied by a memorandum or brief.

§ 121.71 Final order after public hearing.

As soon as practicable after the time for filing exceptions has passed, the record and the exceptions shall be presented to the Secretary and he shall cause to be published in the FEDERAL REGISTER his final order promulgating the regulation, which shall specify the date on which the order shall take effect.

§ 121.72 Adoption of regulation on initiative of Commissioner.

(a) The Commissioner upon his own initiative may propose the issuance of a regulation prescribing, with respect to any particular use of a food additive, the conditions under which such additive may be safely used. Notice of such proposal shall be published in the FEDERAL REGISTER and shall state the reasons for the proposal.

(b) Action upon a proposal made by the Commissioner shall, after publication of the notice, proceed as provided in § 121.51 and section 409 of the act.

§ 121.73 Judicial review.

The Secretary of Health, Education, and Welfare hereby designates the Assistant General Counsel for Food and Drugs of the Department of Health, Education, and Welfare as the officer upon whom copy of petition for judicial review shall be served. Such officer shall be responsible for filing in the court a transcript of proceedings and the record on which the order of the Secretary of Health, Education, and Welfare is based. The transcript and record shall be certified by the Secretary.

§ 121.74 Procedure for amending and repealing tolerances or exemptions from tolerances.

(a) The Commissioner or any interested person may propose the issuance of a regulation amending or repealing a regulation pertaining to a food additive or granting or repealing an exemption for such additive. Such a proposal by an interested person shall be in writing. If such proposal by an interested person furnishes reasonable grounds therefor, the Commissioner will publish a notice announcing the proposal. Proposals ini-

tiated by the Commissioner will likewise be published. Following such publication, the proceedings shall be the same as prescribed by section 409 of the act and the regulations in this part for the promulgation of a regulation.

(b) "Reasonable grounds" shall include an explanation showing wherein the person has a substantial interest in such regulation and an assertion of facts (supported by data if available) showing that new information exists with respect to the food additive or that new uses have been developed or old uses abandoned, that new data are available as to toxicity of the chemical, or that experience with the existing regulation or exemption may justify its amendment or repeal. New data should be furnished in the form specified in § 121.51 for submitting petitions.

§ 121.75 Exemption for investigational use.

A food additive, or a food containing such an additive intended for investigational use by qualified experts, shall be exempt from the requirements of section 409 of the act: *Provided*, That the food additive or the food containing the additive bears a label which states prominently "Caution—Contains. new food additive—For investigational use only. Not to be used for human food or food for other than laboratory animals."

Effective date. This order shall become effective upon publication in the FEDERAL REGISTER.

Dated: March 23, 1959.

[SEAL] JOHN L. HARVEY,
Deputy Commissioner of Food and Drugs.

Department of the Interior

FISH AND WILDLIFE SERVICE

GENERAL USE OF FISH TRAPS BARRED IN ALASKA SALMON FISHERY:

General use of the fish trap, for years a controversial type of salmon-fishing equipment in Alaska, is prohibited by the 1959 Alaska commercial fishing regulations issued on March 9 by the Department of the Interior. The regulations were approved by Secretary of the Interior Fred A. Seaton on March 7.

Despite the elimination of most fish traps, little or no relaxation of restrictions is proposed in other forms of fishing gear because of the generally weak salmon runs expected by the Department in most areas of Alaska in 1959. In fact, more severe restrictions on other forms of gear would have been necessary if the fish trap action had not been taken.

Pink and red salmon account for about 80 percent of the annual Alaska salmon

PINK SALMON
ONCORHYNCHUS GORBUSCHA

catch and predictions are for poor runs in both of these species. Pink salmon, which has a two-year cycle, had a poor escapement in 1957; hence the prediction of small runs in 1959. Red salmon, with a four to six-year cycle had a poor escapement in both 1954 and 1955.

The general ban on fish traps does not apply to those traps owned and operated by Indian villages. There are 21 such sites in Alaska, some of which have been owned and operated by the Indians since 1891. Eleven of these sites will be allowed to operate this year. This assures the Indians the same number of traps allowed in 1958, and is in accordance with the intent of Alaska Statehood legislation which requires recognition of the rights of the natives.

The fish trap issue, which had been a point of controversy for many years, was brought to a head last autumn when Secretary Seaton announced on November 9, that the Department would recommend a prohibition on the use of that type of equipment on the salmon runs. Numerous public hearings followed the Secretary's pronouncement. Well advertised public hearings were held in nine cities, beginning with a session in Seattle, Wash., December 3, 4, and 5. The Seattle meeting was followed by three-day public hearings in

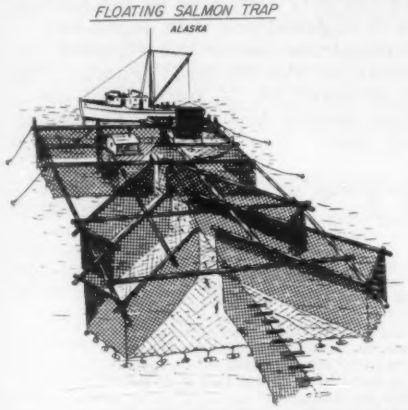
SOCKEYE (RED) SALMON
(ONCORHYNCHUS NERKA)

Juneau and Anchorage, Alaska. In January, one-day hearings were held in Kodiak, Dillingham, Cordova, Sitka, Wrangell, and Ketchikan. A one-day hearing also was held on January 19, in Washington, D. C. In all hearings there was opportunity for full discus-

sion of the proposed fish trap regulation as well as other proposed regulations for 1959.

The fish trap is a corral-type structure operated in an appropriate place along a salmon migration route. There were 243 such traps operated along Alaska's coastline in 1958.

The total "take" of the traps was limited by the number of days they were



permitted to operate each week. In recent years traps have taken 25 to 40 percent of the total Alaska salmon catch.

On two recent occasions Alaskans have voted overwhelmingly in favor of eliminating salmon traps. With the advent of statehood, Secretary Seaton announced that the Department would, as rapidly as possible, adjust its actions to reflect the wishes of Alaskans in the disposition of their natural resources.

Under the terms of the Alaska Statehood Act, jurisdiction over the fish and wildlife resources of the new State remains in the Federal Government until the State legislature makes adequate provision for administration of these resources.

The regulations are silent about a second question, the red salmon fishery in Bristol Bay during the coming season. The Bureau of Commercial Fisheries, United States Fish and Wildlife Service, recommended delay in drafting regulations to cover that situation to permit clarification of Japanese intentions in its high-seas fishery which intercepts runs destined for Bristol Bay. The Department of State is negotiating with the Japanese Government to limit the 1959 Japanese fishery harvest to 1958 levels which would permit a limited fishery in Bristol Bay.

Prince William Sound, where poor pink salmon runs and escapement in the 1957 cycle year portend a weak run in 1959, will be closed to fishing this year in an effort to build up the run for 1961.

The taking of salmon for "personal use" has been severely restricted in the Cook Inlet area. The very significant population increase in the Anchorage area and the increased accessibility to the salmon streams through road construction have resulted in a tremendous increase in the individuals fishing for sport and home use. The 1959 regulations place a bag limit on fish taken by hook and line; a number of stream areas will be closed entirely; and personal use fishing with nets will be drastically curtailed.

The regulations retain the "status quo" in regard to several issues debated at length by the various segments of the industry. No change is provided in the 50-foot limit on salmon purse seine vessels long in effect in most areas of Alaska.

The use of drum seines and power blocks to facilitate the operation of salmon purse seines also is permitted throughout Alaska, as in 1958.

Treasury Department

BUREAU OF CUSTOMS

CANNED-IN-BRINE TUNA IMPORTS QUOTA FOR 1959:

The quantity of tuna canned in brine which may be imported into the United States during the calendar year 1959 at the 12½-percent rate of duty is limited to 52,372,574 pounds, 17.2 percent more than the 44,693,874 pounds in 1958 and 11.5 percent more than the 45,460,000-pound quota for 1957. Any imports in excess of the 1959 quota will be dutiable at 25 percent ad valorem, the Bureau of Customs announced in the April 9, 1959, Federal Register.

Any tuna classifiable under Tariff Act paragraph 718(b)--fish, prepared or preserved in any manner, when packed in airtight containers . . . (except fish packed in oil or in oil and other substances; . . .)--which is entered or withdrawn for consumption during 1958 is included.

A proclamation (No. 3128), issued by the President on March 16, 1956, gave effect to an exchange of notes with the Government of Iceland to withdraw tuna canned in brine from the 1943 trade agreement and invoked the right to increase the duty reserved by the United States in negotiations with Japan and other countries under the General Agreement on Tariffs and Trade. The quota is based on 20 percent of the previous year's United States pack of canned tuna.

The notice as published in the April 9, 1959, Federal Register follows:

DEPARTMENT OF THE TREASURY

Bureau of Customs

[T. D. 54828]

TUNA FISH

Tariff-Rate Quota

APRIL 6, 1959.

Pursuant to Presidential Proclamation No. 3128 of March 16, 1956 (T.D. 54051), it has been determined that 52,372,574 pounds of tuna may be entered for consumption or withdrawn from warehouse for consumption during the calendar year 1959 at the rate of 12½ per centum ad valorem under paragraph 718(b), Tariff Act of 1930, as modified. Any tuna classifiable under paragraph 718(b) of the tariff act which is entered, or withdrawn, for consumption during the current calendar year in excess of this quota will be dutiable at the full rate of 25 per centum ad valorem.

The above quota is based on the United States pack of canned tuna during the calendar year 1958, as reported by the United States Fish and Wildlife Service.

[SEAL] RALPH KELLY,
Commissioner of Customs.

Note: Also see Commercial Fisheries Review, May 1958, p. 76.

Eighty-Sixth Congress

(First Session)

Public bills and resolutions which may directly or indirectly affect the fisheries and allied industries are reported upon. Introduction, referral to committees, pertinent legislative actions, hearings, and other actions by the House and Senate, as well as signature into law or other final disposition are covered.

ALASKA'S COMMERCIAL FISHERIES--ABOLITION OF FISH TRAPS: Senator Gruening on March 12 spoke on the floor of the Senate on the abolition of fish traps in Alaska's commercial fisheries. Excerpts of the Senator's remarks follow:

"Mr. President, news which will be greeted enthusiastically by Alaskans was contained in an announcement this week by the Secretary of the Interior Fred A. Seaton, that he has included in Alaska commercial fisheries regulations this year a provision abolishing use of a device known as the fish trap. This fish trap abolition order is for Alaskans the best news to come out of Washington--I mean Washington, D. C., and not the State of Washington--the best news since the Congress passed the Alaska Statehood Act last year.

"The departure of the fish trap from our waters is long overdue.

"The fish trap in the almost unanimous view of Alaskans is a monopolistic device which more than

any other thing has led to the tragic depletion of what once was Alaska's greatest natural resource and the greatest national fisheries resource, the Pacific salmon . . .

"Mr. President, we shall shortly be debating the area redevelopment bill. It is my hope that it will be speedily passed. I am hopeful that it will prove helpful in assisting some of the Alaska fishing areas in their rehabilitation, as well as other depressed areas in the 49 States . . .

"The action by the Secretary of the Interior in banning the general use of fish traps--however late--is welcome. It comes some 10 days after the first State Legislature of Alaska took similar action.

"Meanwhile, Alaskans will now begin the long task of rebuilding from the bottom the once great salmon fishery resource. I am confident that now--having control of this resource, cherishing it, living close to it, understanding its importance--they will eventually succeed."

ALASKA'S COMMERCIAL FISHERIES--BRISTOL BAY SALMON FISHING CLOSURE: On the closure of the Bristol Bay red salmon fishery to commercial fishing for the 1959 season, Congressman R. J. Rivers made certain observations which were published in the Appendix of the March 20 Congressional Record. Excerpts follow:

"Mr. Speaker, the recent announced intention of the Department of the Interior to close the Bristol Bay Salmon Fishery is a severe blow to the residents of the Bristol Bay area in southwestern Alaska. This is so because fishing is the principal means of livelihood for the people of that area. . . They have watched the situation get progressively worse since the Japanese started their high-seas fishery for salmon in the North Pacific in 1952. Although only 2 million fish were taken by the Japanese in that year, their activity grew rapidly until they took 64 million salmon in 1955, and the catch has fluctuated between this figure and about 40 million since then. Although only a portion of the salmon caught by the Japanese are spawned in American streams, the area in which the Japanese fishing is conducted is an area in which there is intermingling of Alaska spawned salmon and Asian spawned salmon. This has been ascertained through scientific research by Canada, Japan, and the United States under the terms of the North Pacific Convention entered into between those countries 5 years ago. This is the treaty wherein the Japanese agreed not to fish east of 175° west longitude and which treaty will not expire for another 5 years. Although this dividing line is admittedly provisional and subject to modification by mutual agreement of said three countries on the basis of knowledge obtained through research, there is nothing in the treaty which would compel the Japanese to agree to any change. Thus, by staying on their own side of the line they are living up to the letter of the treaty, but not the spirit thereof. Furthermore, their miles of seines with mesh too small for conservation purposes are catching over 1 million immature salmon every year which were spawned in the streams flowing into Bristol Bay. Accordingly, the treaty also needs changing to avoid the destructive effect of catching immature salmon.

"As a result of these events, including the bumper catch by the Japanese in 1955, the U. S. Fish and Wildlife Service estimates a low-cycle return of salmon into Bristol Bay during the coming 1959 fishing season, so small, in fact, as to not allow the catching of any salmon by American fishermen in Bristol Bay this summer. Unless estimates change, all of the salmon which reach Bristol Bay during the pending season must be allowed to go up the streams to spawn in order to perpetuate and improve this great American resource . . .

"This statement would not be complete without my saying that a research program still in its infancy shows that salmon from our west coast other than those spawned in Bristol Bay, and other than red salmon, also mingle in the same north Pacific feeding grounds about which I am speaking and it might well be that the entire West Coast salmon fishery all the way from Oregon to Alaska's Seward Peninsula on the Bering Sea is being adversely affected.

"In view of the fact that this untenable situation is of national importance, Congressman Thomas M. Pelly from the State of Washington, and others have joined with me in introduction of bills which would ban the import into the United States of Japanese-caught salmon until such time as the Japanese cooperate with our State Department in renegotiating the North Pacific Fishery Convention for the long range mutual benefit of all concerned. As the situation now stands, and unless there is an early change for the better, it is going to be necessary in the national interest to enact such legislation. . ."

ALASKA OMNIBUS ACT: S. 1541 (Murray & 4 other Senators), a bill to amend certain laws of the United States in light of the admission of the State of Alaska into the Union, and for other purposes; to the Committee on Interior and Insular Affairs; introduced in Senate March 25. The proposed legislation is largely technical providing changes in Federal laws, necessary because of the change in Alaska's status from Territory to a State, eliminating inappropriate reference to the "Territory of Alaska" in Federal statutes. Other provisions are substantive, such as the termination of certain special Federal programs in Alaska, and enabling Alaska to participate in other programs, including Fish and Wildlife Restoration, and "an equal footing with other States." The bill was drafted by the executive agencies concerned with the administration of Federal responsibilities in Alaska.

Also H. R. 6091 (Aspinall), and H. R. 6109 (O'Brien of New York); both introduced in House March 26; both to the Committee on Interior and Insular Affairs. Similar to S. 1541 previously introduced.

ALBATROSS III DEACTIVATION HEARINGS: The special Subcommittee on Oceanography of the House Committee on Merchant Marine and Fisheries conducted hearings on the deactivation of the Fish and Wildlife Oceanographic Research Vessel Albatross III and on March 12 heard testimony from Donald L. McKernan, Director, Bureau of Commercial Fisheries, U. S. Department of Interior.

COLUMBIA RIVER FISHERIES PROGRAMS: The sub-committee on Public Works of the Senate Committee on Appropriations continued its hearings on proposed fiscal 1960 budget estimates for civil functions of the Corps of Engineers. On March 23 heard testimony from Donald McKernan, Director,

Bureau of Commercial Fisheries, U. S. Department of the Interior, who discussed the Columbia River fisheries programs.

DOGFISH SHARK ERADICATION: H. R. 5937 (Norblad), a bill to amend the act providing for a program to eradicate the dogfish shark on the Pacific coast in order to expand such program; to the Committee on Merchant Marine and Fisheries; introduced in House March 23. Similar to S. 1264 previously introduced which would extend the program from a "four year" to a "five year" period and would provide incentive payments to fishermen with respect to both dogfish shark carcasses and livers.

FISHERIES ASSISTANCE ACT OF 1959: H. R. 5421 (MacDonald), a bill to provide a program of assistance to correct inequities in the construction of fishing vessels and to enable the fishing industry of the United States to regain a favorable economic status, and for other purposes; introduced in House March 9; also H. R. 5566 (Bates) introduced in House, and S. 1374 (Saltonstall and 4 other Senators) introduced in Senate, both on March 11, similar to H. R. 5421; House bills to Committee on Merchant Marine and Fisheries, Senate bill to Committee on Interstate and Foreign Commerce. The bills contain certain provisions similar to those provided for in H. R. 181 and related bills previously introduced and reported under title of Fisheries Assistance Act of 1959. Specifically the bills would provide for a construction cost differential for new fishing vessels and would establish a loan fund of $5 million for long-term credit to processors located in distressed segments of the fishing industry.

Senator Saltonstall introduced on March 11 a comprehensive measure (S. 1374) to assist depressed segments of the fishing industry. Saltonstall filed the bill for himself and Senators Kennedy, Smith, Muskie, and Magnuson.

The bill is a companion to one (H. R. 5566) filed on the same day in the House by Congressman William Bates. It is similar to one filed by the same sponsors (except Senator Muskie) in the last Congress (which was reported favorably by the Senate Interstate and Foreign Commerce Committee but it failed of final passage in the closing days of that Congress).

Saltonstall noted that several months of study had gone into the bill and that it was considered to be an improved version over the Federal Fisheries Assistance Act proposed last year.

The bill calls for: (1) a construction cost differential for new fishing vessel construction; (2) a loan fund of $5 million for long-term credit to processors located in distressed segments of the fishing industry.

In separate legislation last year loan provisions were enacted for the benefit of fishing-vessel operators.

Senator Saltonstall and Congressman Bates issued the following joint statement:

"It has been clear for many years that the domestic groundfish industry faces a grave economic problem. And the problem is of no small consequence to New England, for over 60,000 people depend for their livelihood on this industry.

"Twice in recent years President Eisenhower has been constrained for reasons of national security to reject two recommendations by the Tariff Commission for the relief of the New England groundfish industry. The industry has established economic justification before the Tariff Commission and demonstrated that it cannot maintain competition against foreign imports without tariff relief or some other measure of assistance. But security considerations have precluded relief; and industry's condition continues to worsen.

"We therefore ask only this: Is it equitable to assume that one industry should bear the entire brunt of our national security policies with respect to friendly nations engaged in fisheries commerce? Should this industry be forced to suffer economically for national security considerations which affect us as a nation as a whole?

"Some measure of assistance is clearly in order. On this all are in agreement.

"This legislation meets the immediate needs of the distressed segments of this vital industry. It will enable shore processors to regain a measure of economic stability and to strengthen their competitive position greatly damaged in recent years by heavy imports of groundfish. It further provides that construction differential payments will be made to fishing vessel operators who are now required under existing regulations to build new vessels in this country.

"Oftentimes vessels can be built 30 to 50 percent cheaper in a foreign yard, but the operator is precluded from taking advantage of this saving.

"Yet, he must go out and fish sometimes just a few yards away from his foreign competitor whose vessel was built at this reduced cost. If there are tariffs to protect the domestic operator then he is unconcerned that the foreign boat was built at much less than the cost of his own.

"But in view of the present tariff situation the fisherman is compelled to compete in the open market with the foreign producers. Thus the requirement that he build his boat in this country makes it virtually impossible for him to compete on fair terms with his foreign counterparts. If we cannot raise tariffs--and it is clear under present international conditions that we cannot--then we must permit fishermen who are in direct day to day competition with fishing fleets of foreign nations to overcome this inequity, just as the Maritime Act contemplated and just as the Maritime Act now permits with our Merchant Marine. There is no distinction in the justification of the two and it is time that Congress remedied the patent injustice."

Joint Memorial of the Legislative Assembly of the State of Massachusetts was presented to the Senate by Senator Saltonstall (for himself and Mr. Kennedy) on April 10 and to the House by Congressman Lane on April 14. The Memorial urges the Congress of the United States to enact legislation to alleviate the burdens presently existing on the textile and fishing industries of Massachusetts

adversely affected by national and international policies; Memorial to the Senate was referred to the Committee on Banking and Currency, Memorial to the House was referred to the Committee on Ways and Means.

FISH AND WILDLIFE COOPERATIVE RESEARCH TRAINING UNITS: H. R. 5814 (Metcalf), a bill to provide for cooperative unit programs of research, education, and demonstration between the Federal Government of the United States, colleges and universities, the several States and Territories, and private organizations, and for other purposes; to the Committee on Merchant Marine and Fisheries; introduced in House March 18. The bill would authorize the Secretary of the Interior to permit the U. S. Fish and Wildlife Service and other agencies within his Department to enter into cooperative agreements with other Federal agencies, colleges and universities, State and Territorial fish and game departments, and nonprofit organizations for conducting research, training, and demonstrational programs through the establishment of cooperative research units, which may be named for the various States and Territories in which they are formed.

GAME FISH IN DAM RESERVOIRS RESEARCH: S. 1262 (Fulbright), a bill to direct the Secretary of the Interior to establish a research program in order to determine means of improving the conservation of game fish in dam reservoirs; to the Committee on Interstate and Foreign Commerce; introduced in Senate on March 5. Also H. R. 5959 (McGovern) introduced in House March 23, H. R. 6115 (Sikes) introduced in House March 26; and H. R. 6184 (Miller) introduced in House April 8; all to the Committee on Merchant Marine and Fisheries. Similar to S. 1262 previously introduced which would provide a research program to be conducted for improving conservation of game fish in dam reservoirs.

HAWAII STATEHOOD: The President of the United States signed into law S. 50, to provide for the admission of Hawaii into the Union. Signed March 18, 1959 (P. L. 86-3).

INCOME FROM FISHING WHERE CATCH IS LANDED IN PUERTO RICO: H. R. 5709 (King of California), a bill to amend the Internal Revenue Code of 1954 with respect to income derived from fishing where the catch is landed in Puerto Rico; to the Committee on Ways and Means; introduced in House March 16. Provides that income derived from the conduct of a fishing venture shall be treated as income derived from sources within Puerto Rico, if the catch of fish (including shellfish and crustacea) is landed, sold, or delivered in Puerto Rico. The bill would also provide that for purposes relating to withholding tax on wages, services performed by a citizen of the United States within Puerto Rico, or in connection with a fishing venture where the catch is landed, sold or delivered in Puerto Rico, the employee will be considered a bona fide resident of Puerto Rico. This exempts those individuals in the category from United States income tax.

INSECTICIDES EFFECT UPON FISH AND WILDLIFE: H. R. 5813 (Metcalf), a bill to amend the act of August 1, 1958, to authorize and direct the Secretary of the Interior to undertake continuing studies of the effects of insecticides, herbicides, fungicides, and other pesticides, upon fish and wildlife for the purpose of preventing losses of those invaluable natural resources and for other purposes; to the Committee on Merchant Marine and Fisheries; introduced in House March 18. Increases amount of money for studies by both the Bureau of Sport Fisheries and Wildlife and the Bureau of Commercial Fisheries from $280,000 to $2,565,000 annually.

Also S. 1575 (Magnuson) introduced in Senate March 26; to the Committee on Interstate and Foreign Commerce. Similar to H. R. 5813 previously introduced.

INTERIOR APPROPRIATIONS: H. R. 5915 (Kirwan), a bill making appropriations for the Department of the Interior and related agencies for the fiscal year ending June 30, 1960, and for other purposes, introduced in House March 20. Included are appropriations for the Fish and Wildife Service and its two Bureaus. Reported to the House (H. Rept. 237) on March 20 and referred to the Committee of the Whole House on the State of the Union.

The House on March 23 passed without amendment H. R. 5915, making appropriations for the Department of the Interior and related agencies for fiscal year 1960. Included are appropriations for the Fish and Wildlife Service and its two Bureaus. As reported from the Committee on Appropriations the bill provides funds for the Department totaling $472,198,800, which amount is $22,912 below the 1959 appropriation, and $18,902,600 under the budget estimates.

House Report No. 237, Department of the Interior and Related Agencies Appropriation Bill, 1960 (March 20, 1959, 86th Congress, 1st Session, Report of the House Committee on Appropriations to accompany H. R. 5915), 29 pp., printed. Contains appropriations for the Department of Interior and related agencies for fiscal year 1960. Included are funds for the Fish and Wildlife Service and its two Bureaus totaling $26,546,000, which amount is $3,227,750 greater than the 1959 appropriation, but $2,598,400 under the budget estimate.

OFFICE OF THE COMMISSIONER OF FISH AND WILDLIFE SERVICE: The Committee has allowed $340,000 for executive direction and coordination of the Fish and Wildlife Service at headquarters in Washington, D. C. The amount represents a reduction of $3,000 in the budget estimate for Pay Act costs but is an increase of $32,200 over the 1959 appropriation.

BUREAU OF SPORT FISHERIES AND WILDLIFE: The Committee recommended funds totaling $16,708,000, an increase of $323,550 over the 1959 appropriation, but $922,200 less than the budget estimate.

BUREAU OF COMMERCIAL FISHERIES: The Committee recommended funds totaling $9,498,000, an increase of $2,872,000 over the 1959 appropriation, but $1,673,200 less than the budget estimate.

Management and Investigation of Resources: The Committee recommended $5,928,000, a reduction of $1,673,000 from the budget request and a decrease of $23,000 from the 1959 appropriation. The reduction in the 1960 estimate results from a change in the proposed method of financing which

the Committee feels should not affect the planned level of operation except for the required absorption of $35,000 of the Pay Act costs and a decrease of $30,000 in the request of $80,000 for the administration of the Fishing Vessel Mortgage Insurance Program.

Of the reduction, $1,230,350 has been made in the request for administration of the Alaska fisheries. In lieu of the direct appropriation request of $1,664,700, the Committee provided a direct appropriation of $435,000 which together with the provision of $398,000 from the unbudgeted Pribilof Island's receipts will finance the activity until January 1, 1960. The Committee feels that this allows adequate time for Alaska to prepare for assumption of this responsibility as provided for in the Statehood Act. The additional reduction of $378,000 results from a deferral of a portion of the proposed shift in financing of current research from permanent appropriations to a direct appropriation basis. The amount deferred represents the unobligated balance estimated for the permanent appropriation for fiscal year 1960.

The increases allowed include the following: $158,300 for additional research including insecticide studies; $50,000 for administration of the Fishing Vessel Mortgage Insurance Program; $271,050 to shift the financing of certain research projects from the permanent to a direct appropriation basis; and $320,000 for Pay Act costs.

Construction: The budget estimate of $245,000 is recommended by the Committee, a decrease of $255,000 from the 1959 appropriation. The major project to be financed in 1960 is the installation of salt-water system for experimental research at the Galveston, Tex. Laboratory.

Fisheries Loan Fund: The Committee has allowed the budget request of $3,000,000 to provide additional capital for the fisheries loan fund to continue loans for the operation, maintenance, replacement, and equipment of fishing gear and vessels.

Limitation on Administrative Expenses, Fisheries Loan Fund: The Committee has recommended the budget limitation of $313,000, the same as for the current year.

General Administrative Expenses: The Committee has allowed $325,000, a decrease of $200 in the budget request and an increase of $150,000 in the 1959 appropriation. This increase reflects a transfer in the estimates to this item of $135,200, from the Bureau of Sport Fisheries and Wildlife, under the reorganization of the Service, and $14,800 for Pay Act costs.

Administration of Pribilof Islands: The Committee recommends the budget estimate of $1,940,000 for administration of the Pribilof Islands. The funds are derived from the proceeds from sales of fur seal skins and other wildlife products of the Islands. Although the amount allowed represents an increase of $599,569 in the 1959 appropriation, it is an increase of only $20,000 on a funds available basis.

Administrative Provisions: The Committee has disallowed the request for replacement of six aircraft for the use in Alaska at a cost of $70,000. The Committee sees no necessity for the request in light of the planned transfer of the administration of the Alaska Game and Fish Laws to the State of Alaska.

INTERIOR SUPPLEMENTAL APPROPRIATIONS: H. R. 5916 (Thomas), a bill making supplemental appropriations for the fiscal year ending June 30, 1959, and for other purposes, introduced in House March 20. Included under the Department of Interior are increases for the Fish and Wildlife Service and its two Bureaus to take care of salary increases provided by law last year. Reported to the House (H. Rept. No. 238) on March 20 and referred to the Committee of the Whole House on the State of the Union.

The House on March 24 passed H. R. 5916, making supplemental appropriations for fiscal year 1959. Included are appropriations for the Fish and Wildlife Service and its two Bureaus to meet salary increases provided for last year.

The Subcommittee of the Senate Committee on Appropriations held hearings April 7 on H. R. 5916, second supplemental appropriations for fiscal year 1959, with testimony from witnesses representing various agencies. This bill contains a request for funds to cover Fish and Wildlife Service salary increase costs voted by Congress in 1958 for all Government employees.

House Report No. 238, Second Supplemental Appropriation Bill, 1959 (March 20, 1959, 86th Congress, 1st Session, Report of the House Committee on Appropriations to accompany H. R. 5916), 55 pp., printed. Contains supplemental appropriations for the Department of Interior and related Agencies for fiscal year, 1959. Included are funds for the Fish and Wildlife Service and its two Bureaus to cover Pay Act increases.

OFFICE OF THE COMMISSIONER OF FISH AND WILDLIFE SERVICE: The Committee has allowed $24,300 for Pay Act cost increases to cover salaries and expenses for executive direction and coordination of the Fish and Wildlife Service at headquarters in Washington, D. C. The amount represents a reduction of $2,700 from the budget estimate.

BUREAU OF SPORT FISHERIES AND WILDLIFE: The Committee has allowed funds totaling $765,450, a reduction of $85,050 from the budget estimate for Pay Act cost increases covering salaries and expenses.

BUREAU OF COMMERCIAL FISHERIES: The Committee has allowed funds totaling $333,000, a reduction of $37,000 from the budget estimate, for Pay Act cost increases covering salaries and expenses.

Management and Investigation of Resources: The Committee allowed $319,500, a reduction of $35,500 under budget estimates.

General Administrative Expenses: The Committee allowed $13,500, a reduction of $1,500 under budget estimates.

INTERSTATE TRANSPORTATION OF FISH: A draft of proposed legislation to clarify a provision

in the Black Bass Act relating to the interstate transportation of fish, and for other purposes, was transmitted with an accompanying paper to the House and Senate by the Assistant Secretary of the Interior on March 9, 1959, and referred to the respective Committees; to the Senate Committee on Interstate and Foreign Commerce, to the House Committee on Merchant Marine and Fisheries.

H. R. 5854 (Bonner), a bill to clarify a provision in the Black Bass Act relating to the interstate transportation of fish, and for other purposes; to the Committee on Merchant Marine and Fisheries; introduced in House March 19. Similar to S. 1391 previously introduced. Would provide for the shipment of fish or eggs in interstate commerce for breeding or stacking purposes if they were caught, sold, purchased, or transported in accordance with the laws of the state in which taken.

MARINE GAME FISH RESEARCH: H. R. 6114 (Sikes), a bill authorizing and directing the Secretary of the Interior to undertake continuing research on the biology, fluctuations, status, and statistics of the migratory marine species of game fish of the United States and contiguous waters, introduced in House March 26; and H. R. 6185 (Miller) introduced in House April 8; both to the Committee on Merchant Marine and Fisheries. Similar to H. R. 5004 previously introduced which would provide for a marine game fish research program.

MEDICAL CARE FOR VESSEL PERSONNEL: H. R. 5321 (Pelly), a bill to extend medical, surgical, and dental treatment in hospitals and stations of the Public Health Service without charge to certain seamen on United States-flag fishing vessels in international waters; to the Committee on Interstate and Foreign Commerce; introduced in House March 5. Similar to S. 255 and bills previously introduced providing for certain technical amendments to the Public Health Service Act (42 U.S.C. 249) to insure medical care for vessel personnel. The bill would provide this new subparagraph to section 322 (a) of the Act "(8) Seamen on American-owned United States-flag vessels in excess of twenty feet in length regularly engaged in fishing in international waters."

NAVIGATION AND INSPECTION LAW AMENDMENT: S. 1390 (Magnuson), a bill to repeal and amend certain statutes fixing or prohibiting the collection of fees for certain services under the navigation and vessel inspection laws; to the Committee on Interstate and Foreign Commerce; introduced in Senate March 12. The proposed legislation would repeal certain statutes prohibiting the charging or collection of fees for certain services rendered to vessel owners by the Bureau of Customs and the U. S. Coast Guard. It would further repeal fees presently fixed by statute for other services rendered by the Bureau of Customs to vessel interests and thus permit the Secretary of the Treasury, under general authority, to fix fees to be collected upon the rendering of any of these services.

Also H. R. 5841 (Bonner); to the Committee on Merchant Marine and Fisheries; introduced in House March 19. Similar to S. 1390.

POWER PROJECTS FISHERIES RESOURCES PROTECTION: S. 1420 (Neuberger), a bill to promote the conservation of migratory fish and game by requiring certain approval by the Secretary of the Interior of licenses issued under the Federal Power Act; to the Committee on Interstate and Foreign Commerce; introduced in Senate March 16. The bill would provide the U. S. Fish and Wildlife Service with collateral jurisdiction in Federal Power Commission decisions affecting hydroelectric power development in areas where dams would impair migratory fishery resources and wildlife values.

PRICE CONTROL: S. 1452 (Neuberger and Wiley), a bill to provide authority for temporary price, wage, and rent controls, and for other purposes; to the Committee on Banking and Currency; introduced in Senate March 18. Would give the President of the United States authority to establish standby controls whenever a national emergency exists--either from the military or economic standpoint.

PRICE DISCRIMINATION: S. 1339 (Humphrey & 2 other Senators), a bill to amend the Clayton Act to prohibit sales in commerce at unreasonably low prices where the effect may be to injure competition; to the Committee on the Judiciary; introduced in Senate March 9. Similar to H. R. 11, and other bills previously introduced providing for protection of independent business from price discriminations.

The Antitrust and Monopoly Subcommittee, Senate Committee on the Judiciary, on March 17 began hearings on S. 11, to amend the Clayton Act with reference to equality of opportunity, and S. 138, to define the application of the Clayton Act and Federal Trade Commission Act to certain pricing practices.

PRICE DISCRIMINATION ENFORCEMENT OF ORDERS: H. R. 6049 (Huddleston), a bill to amend section 11 of the Clayton Act to provide for the more expeditious enforcement of cease and desist orders issued thereunder, and for other purposes; to the Committee on the Judiciary; introduced in House March 25. Similar to H. R. 2977 and other related bills previously introduced.

PRICE STABILITY: H. R. 5503 (Hechler), a bill to amend the Employment Act of 1946 to include the promotion of maximum purchasing power at stable price levels as a continuing policy and responsibility of the Federal Government, and for other purposes; introduced in House March 10. Also H. R. 5552 (Ostertag) introduced March 11; H. R. 5658 (Bennett of Florida) introduced in House March 13; all to the Committee on Government Operations. Similar to H. R. 17 and othe bills previously introduced to make stability of prices an explicit part of the economic policy of the Federal Government.

SALMON IMPORT RESTRICTIONS: Senator Warren G. Magnuson, Chairman of the Committee on Interstate and Foreign Commerce, announced on March 20 hearings on the Bartlett-Gruening-Magnuson Bill, S. 502, to facilitate the application and operation of the Fish and Wildlife Act of 1956, in Juneau, Alaska, April 1 and 2. Specifically the bill would ban importation and sale of salmon caught contrary to regulations governing United States fishermen. Senator Bartlett will conduct the Juneau meeting.

A hearing followed in Seattle on April 3 under the direction of Senators Magnuson and Bartlett on the same bill.

Memorial of the Washington State Legislature was presented to the House by Congressman Magnuson on March 23. The Memorial urges the Congress of the United States and the President to take such action as is necessary to preserve and guard the interests of American fishermen through bilateral negotiations between Japan and the United States; referred to the Committee on Foreign Affairs.

House Joint Menorial of the Legislative Assembly of the State of Washington was presented to the Senate on March 24. The Memorial urges the President and the Congress of the United States to take such action as is necessary to preserve and guard the interest of American fishermen through bilateral negotiations between Japan and the United States to prohibit the taking of anadromous salmon in those waters of the Pacific where Asian and North American stocks commingle; referred to the Committee on Foreign Relations.

SALT-WATER RESEARCH LABORATORY: S. 1576 (Magnuson and Jackson), a bill to provide for the construction of a salt-water research laboratory at Seattle, Wash.; to the Committee on Interstate and Foreign Commerce; introduced in Senate March 26. Similar to H. R. 4402 previously introduced.

SEAWEEDS (GROUND, POWDERED, OR GRANULATED) ON FREE IMPORT LIST: H. R. 5887 (Keith), a bill to amend the Tariff Act of 1930 to place ground, powdered, or granulated seaweeds on the free list; to the Committee on Ways and Means; introduced in House March 20.

Also S. 1634 (Saltonstall); to the Committee on Finance; introduced in Senate April 10. Similar to H. R. 5887 previously introduced which would place ground, powdered, or granulated seaweeds on the free import list.

SHIP MORTGAGE INSURANCE AMENDMENTS OF 1959: The Secretary of Commerce transmitted to the Senate and to the House a draft of proposed legislation to amend Title XI of the Merchant Marine Act, 1936, as amended, with respect to insurance of ship mortgages, and for other purposes (with accompanying papers); received on March 11 and referred to respective committees, for the Senate to the Committee on Interstate and Foreign Commerce, and for the House to the Committee on Merchant Marine and Fisheries.

S. 1434 (Magnuson), a bill to amend title XI of the Merchant Marine Act, as amended, with respect to insurance of ship mortgages, and for other purposes; to the Committee on Interstate and Foreign Commerce; introduced in Senate March 16. Provides for a new section which would permit the prospective owner of a vessel to delay placing a mortgage on the vessel until some time after the vessel has been delivered by the shipbuilder, without losing privilege of having the mortgage insured by the Secretary of Commerce. The purpose of the new section is to permit the prospective owner to save interest, and to reduce the period of time during which the Secretary of Commerce is under risk with respect to the mortgage.

Also S. 1457 (Magnuson and Engle), to the Committee on Interstate and Foreign Commerce, introduced in Senate March 18; and H. R. 5919 (Bonner), to the Committee on Merchant Marine and Fisheries, introduced in House March 23. Similar to S. 1434 and bills previously introduced which provide amendments with respect to ship mortgage insurance under title XI of the Merchant Marine Act, 1936, as amended.

The Merchant Marine Subcommittee of the Senate Committee on Interstate and Foreign Commerce on March 24 conducted hearings on S. 1434 and S. 1457, to amend the Merchant Marine Act with respect to insurance of ship mortgages.

SMALL BUSINESS AID FOR FIRMS AFFECTED BY FOREIGN TRADE POLICY: S. 1609 (Javits), a bill to provide assistance to small business concerns to facilitate adjustments made necessary by the foreign trade policy of the United States, and for other purposes; to the Committee on Banking and Currency; introduced in Senate April 8. The bill would enable businesses to obtain loans from the Small Business Administration, permit them to pool their resources, and make them eligible for rapid amortization of certain investments, in order to help them meet foreign competition and to assist them in converting to new lines of enterprise. The bill would also assist unemployed workers from such businesses through retraining and reemployment aid and, where necessary, by helping them to relocate to areas where job opportunities are available.

TRADE AGREEMENTS EXTENSION ACT: H. R. 5894 (Simpson of Pennsylvania), a bill to clarify the application of section 7(c) of the Trade Agreements Extension Act of 1951; to the Committee on Ways and Means; introduced in House March 20. Provides amendments to clarify and strengthen the escape clause in the Trade Agreements Extension Act of 1951, as amended. The bill would permit the President to reject the recommendations of the Tariff Commission or to put them into effect in whole or in part, or to take other action aimed at the remedying of the injury found to exist. Would also permit the establishment of a firm date for the termination of escape clause cases so the Tariff Commission could entertain a new application. Congress would be able to participate in escape clause decisions pursuant to the amendment in the 1958 extension legislation which gave to the Congress authority to apply the Tariff Commission recommendations if it could do so by a two-thirds majority. Similar to H. R. 670 previously introduced.

TRADE AGREEMENTS ADJUSTMENT ACT OF 1959: H. R. 5445 (Stratton), a bill to regulate the foreign commerce of the United States by amending section 350 of the Tariff Act of 1930, as amended, and for other purposes; also H. R. 5449 (Tollefson), and H. R. 5452 (Utt); all introduced in House March 9; also H. R. 5542 (Hays) introduced in House March 11; H. R. 5776 (Bray) introduced in House March 18; H. R. 5952 (Fisher) introduced in House March 23; and H. R. 6102 (Henderson) introduced in House March 26; all to the Committee

on Ways and Means. Similar to H. R. 4846 and related bills previously introduced which provide means for meeting import competition.

UNEMPLOYMENT RELIEF IN DEPRESSED AREAS: H. R. 5381 (Blatnik), a bill to establish an effective program to alleviate conditions of substantial and persistent unemployment and underemployment in certain economically depressed areas; introduced in House March 9; also H. R. 5634 (Staggers) introduced in House March 12; H. R. 6267 (Slack) introduced in House April 10; and H. R. 6347 (Bailey) introduced in House April 14; all to the Committee on Banking and Currency. Similar to H. R. 71 and other bills previously introduced which provide for economic assistance and unemployment relief to depressed areas.

The Senate Committee on Banking and Currency on March 11 ordered favorably reported with amendments S. 722, to establish an effective program to alleviate conditions of unemployment and underemployment in certain economically depressed areas.

Subcommittee No. 3 of the House Committee on Banking and Currency scheduled March 17-20 for continuation of hearings on H. R. 3505, Area Redevelopment Act.

The Senate Committee on Banking and Currency on March 18 favorably reported S. 722, with amendments (S. Rept. 110), to establish an effective program to alleviate conditions of unemployment and underemployment in certain economically depressed areas.

The Senate on March 23, by a vote of 49 to 46 passed with amendments S. 722, to establish an effective program to alleviate conditions of unemployment and underemployment in certain economically depressed areas, after adopting all committee amendments en bloc and certain technical amendments.

The Area Redevelopment Bill, S. 722, an Act to establish an effective program to alleviate conditions of substantial and persistent unemployment and underemployment in certain economically depressed areas; received in House March 24; referred to the Committee on Banking and Currency.

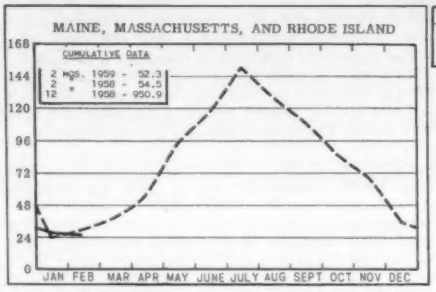
Senate Report No. 110, Area Redevelopment Act (March 18, 1959, 86th Congress, 1st Session, Report of the Senate Committee on Banking and Currency together with minority and individual views to accompany S. 722), 60 pp., printed. The report contains the purpose and major provisions of the bill; lists labor market areas which may be affected; legislative background; Federal, State, and local responsibilities; causes of unemployment and underemployment; proposed administration; loans, grants, technical assistance, and vocational training provisions; technical amendments; and sectional analysis. The appendix contains a tabulation of labor force in areas of substantial labor surplus; individual views; changes in existing law; and includes a map of the United States showing by State the labor market areas which may qualify for assistance.

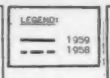
WAGES: H. R. 5792 (Halpern), a bill to amend the Fair Labor Standards Act of 1938, as amended, to provide coverage for employees of large enterprises engaged in retail trade or service and of other employers engaged in activities affecting commerce, to increase the minimum wage under the act to $1.25 an hour, and for other purposes; introduced in House March 18; also H. R. 5842 (Byrne of Pennsylvania) introduced in House March 19; and H. R. 6103 (Holtzman) introduced in House March 26; all to the Committee on Education and Labor. Similar to H. R. 188 and bills previously introduced which provide for an increase in the minimum wage rate and for other purposes.

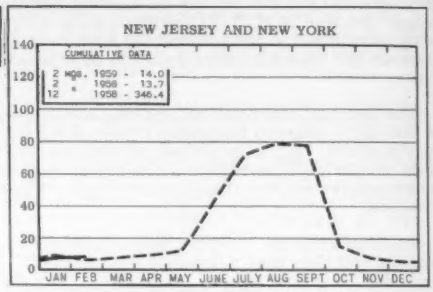
Also H. R. 5868 (Barrett, a bill to amend the Fair Labor Standards Act of 1938 so as to increase the minimum hourly wage from $1.00 to $1.50; introduced in House March 19; H. R. 6069 (Smith of Iowa) introduced in House March 25; H. R. 6124 (Fogarty) introduced in House April 7; H. R. 6239 (Dingell) introduced in House April 10; and H. R. 6364 (Flood) introduced in House April 14; all to the Committee on Education and Labor. Similar to H. R. 83 and other bills previously introduced which provide solely for an increase in the minimum hourly wage rate.

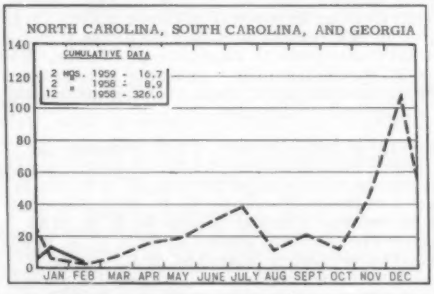
CHART I - FISHERY LANDINGS for SELECTED STATES

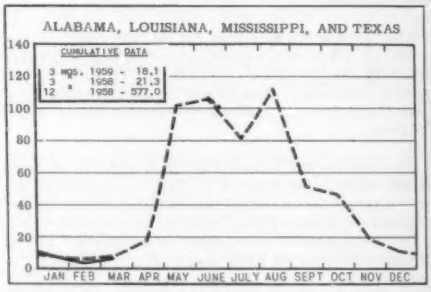
In Millions of Pounds

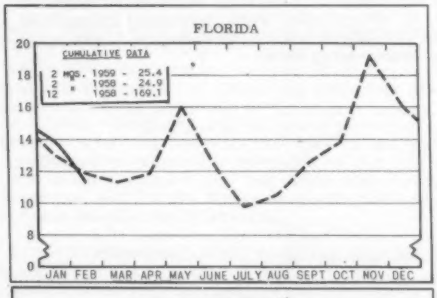


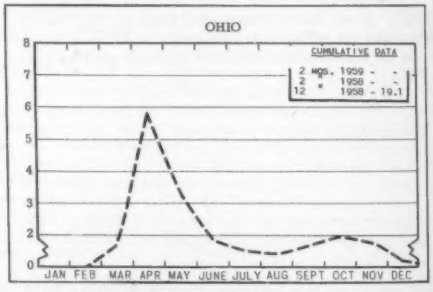


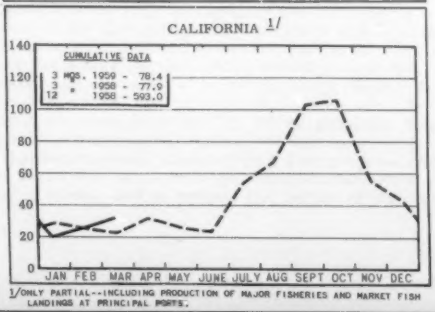


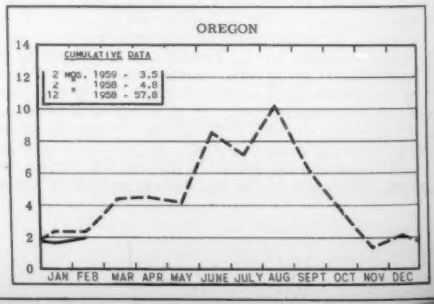








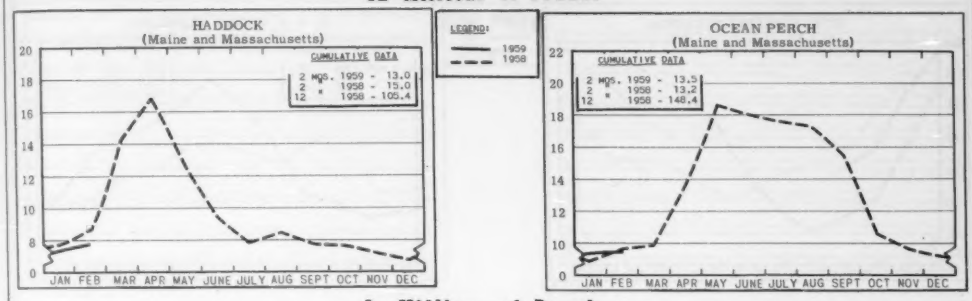




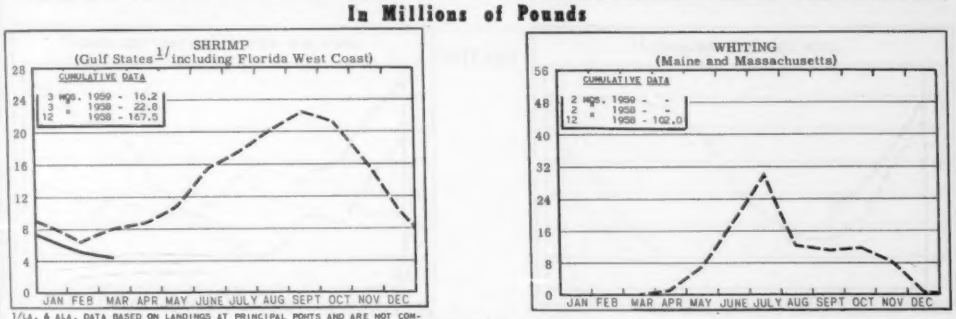
1/ONLY PARTIAL--INCLUDING PRODUCTION OF MAJOR FISHERIES AND MARKET FISH LANDINGS AT PRINCIPAL PORTS.

CHART 2 - LANDINGS for SELECTED FISHERIES

In Millions of Pounds

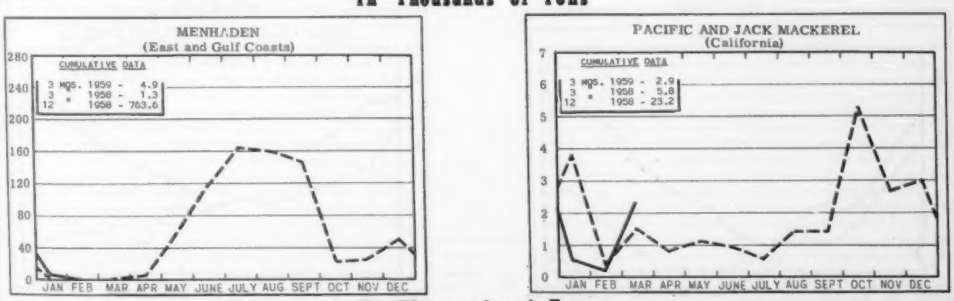


In Millions of Pounds



1/LA. & ALA. DATA BASED ON LANDINGS AT PRINCIPAL PORTS AND ARE NOT COMPLETE.

In Thousands of Tons



In Thousands of Tons

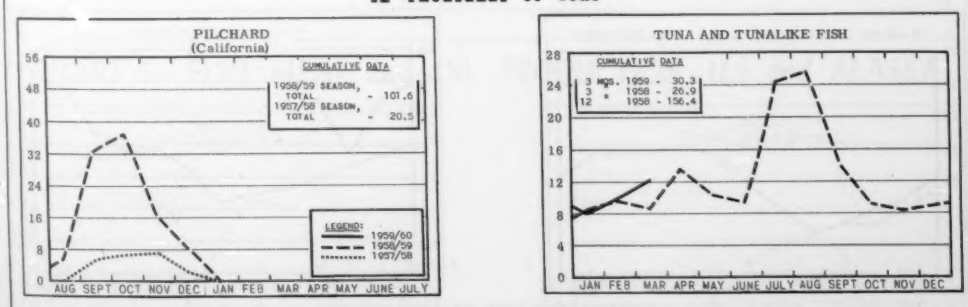
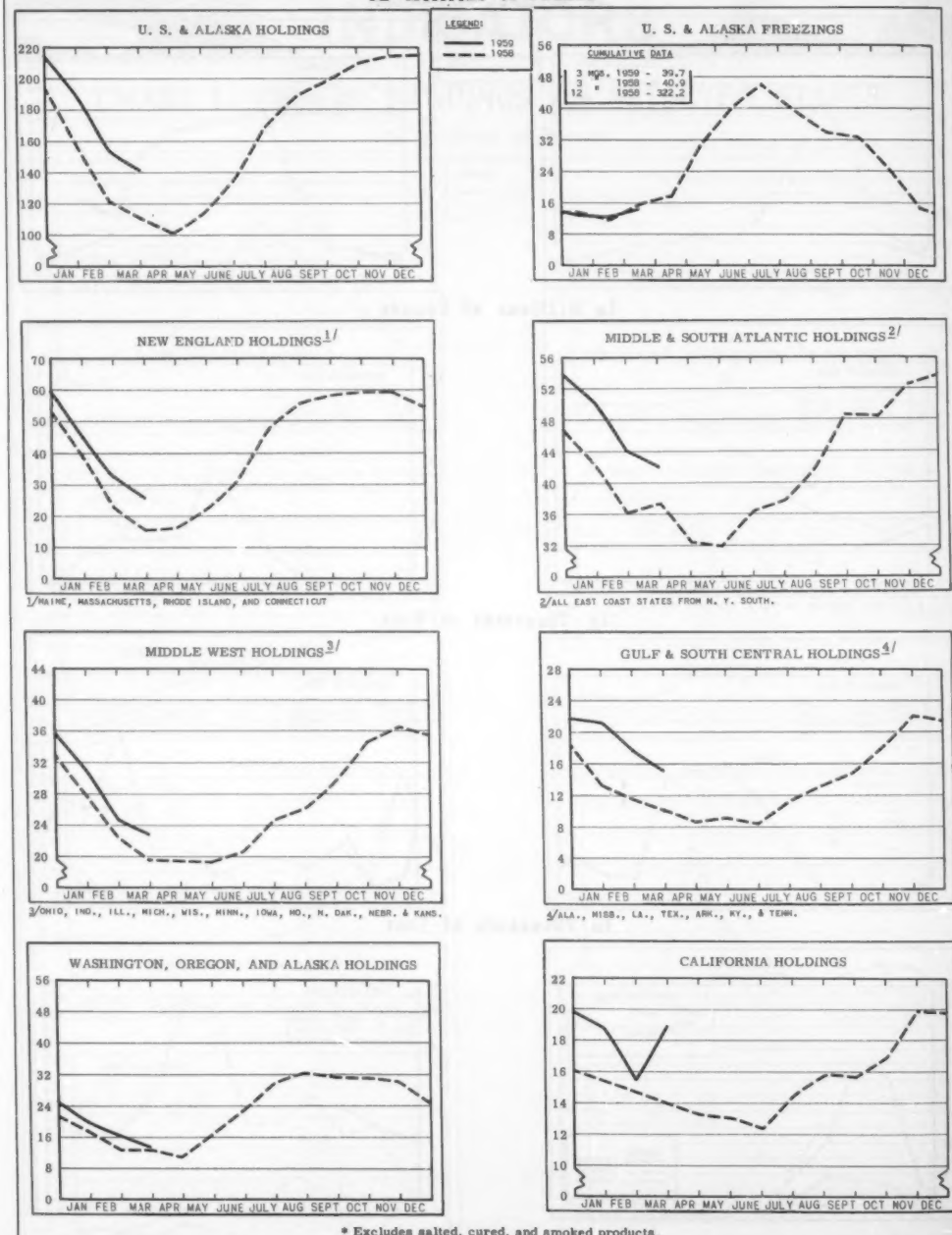


CHART 3 - COLD-STORAGE HOLDINGS and FREEZINGS of FISHERY PRODUCTS *

In Millions of Pounds



1/MAINE, MASSACHUSETTS, RHODE ISLAND, AND CONNECTICUT

2/ALL EAST COAST STATES FROM N. Y. SOUTH.

3/OHIO, IND., ILL., MICH., WIS., MINN., IOWA, MO., N. DAK., NEBR. & KANS.

4/ALA., MISS., LA., TEX., ARK., KY., & TENN.

* Excludes salted, cured, and smoked products.

CHART 4 - RECEIPTS and COLD-STORAGE HOLDINGS of FISHERY PRODUCTS at PRINCIPAL DISTRIBUTION CENTERS

In Millions of Pounds

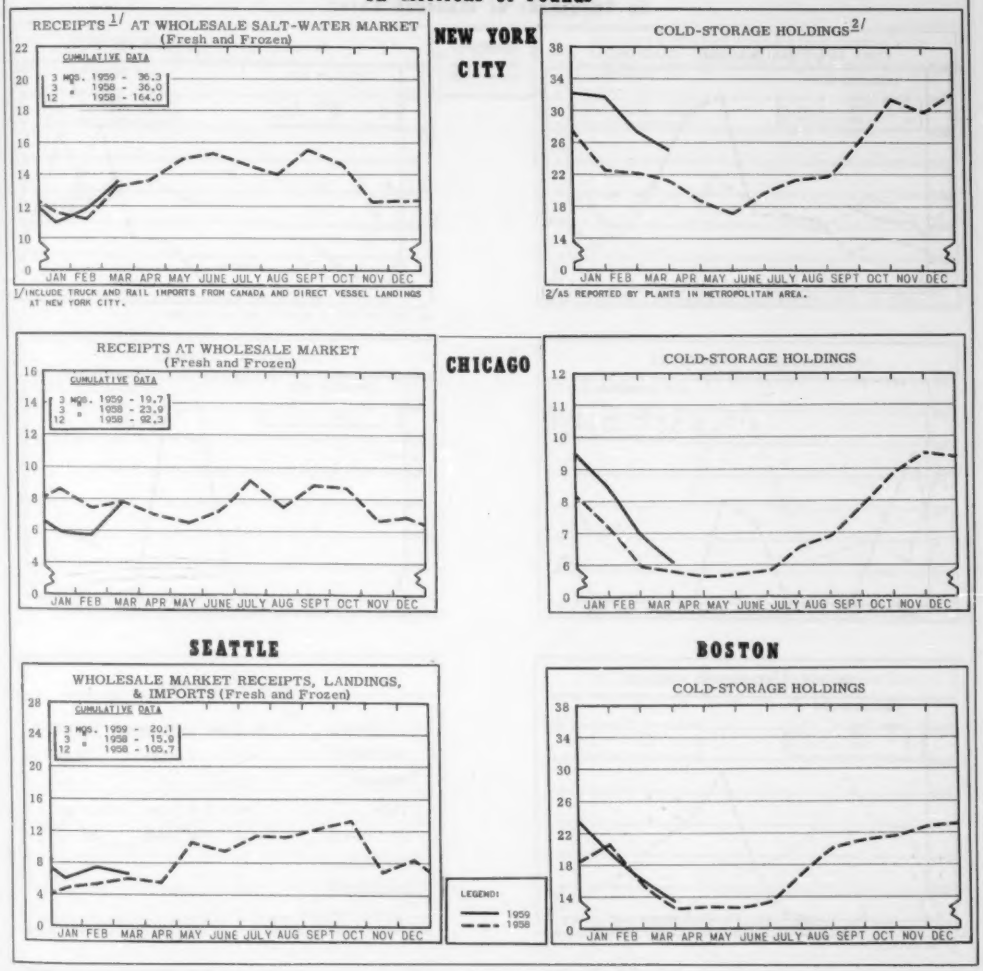


CHART 5 - FISH MEAL and OIL PRODUCTION - U.S and ALASKA

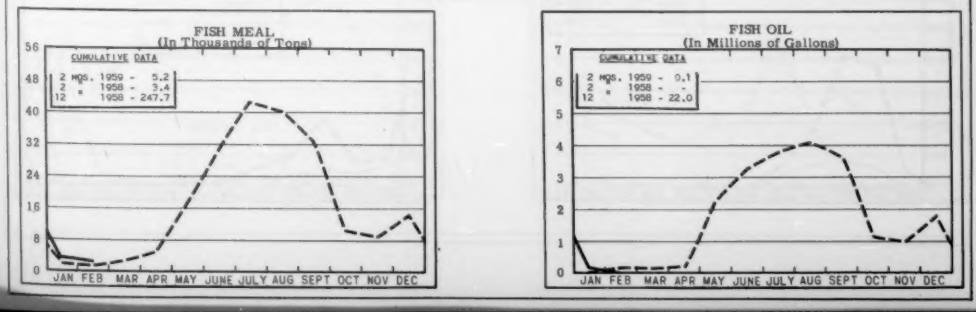
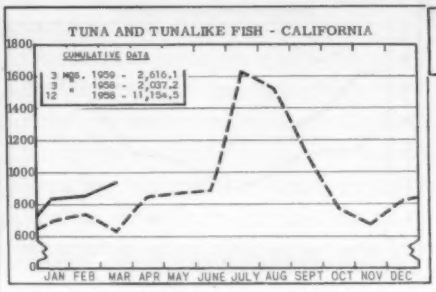
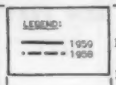
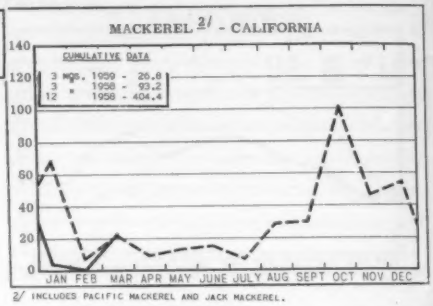


CHART 6 - CANNED PACKS of SELECTED FISHERY PRODUCTS

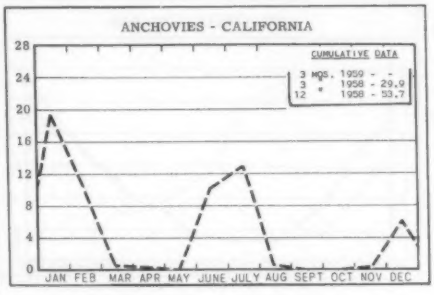
In Thousands of Standard Cases

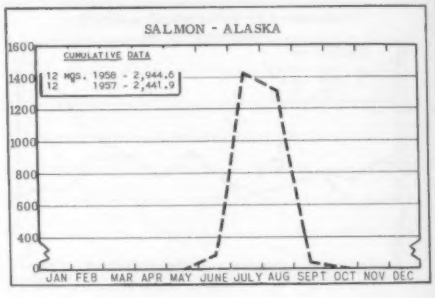


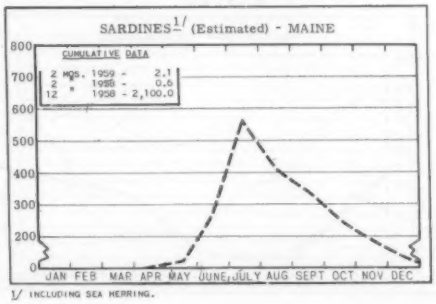




2/ INCLUDES PACIFIC MACKEREL AND JACK MACKEREL.



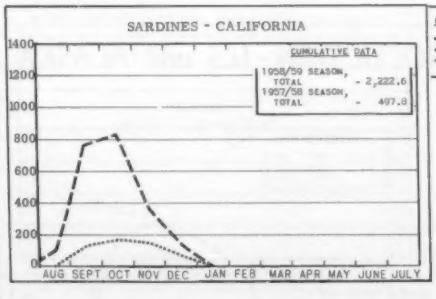


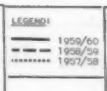


1/ INCLUDING SEA HERRING.

STANDARD CASES

Variety	No. Cans	Designation	Net Wgt.
SARDINES.....	100	¼ drawn	3¾ oz.
SHRIMP.....	48	--	5 oz.
TUNA.....	48	# ½ tuna	6 & 7 oz.
PILCHARDS...	48	# 1 oval	15 oz.
SALMON.....	48	1-lb. tall	16 oz.
ANCHOVIES...	48	½-lb.	8 oz.





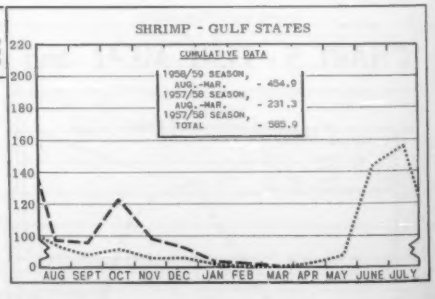
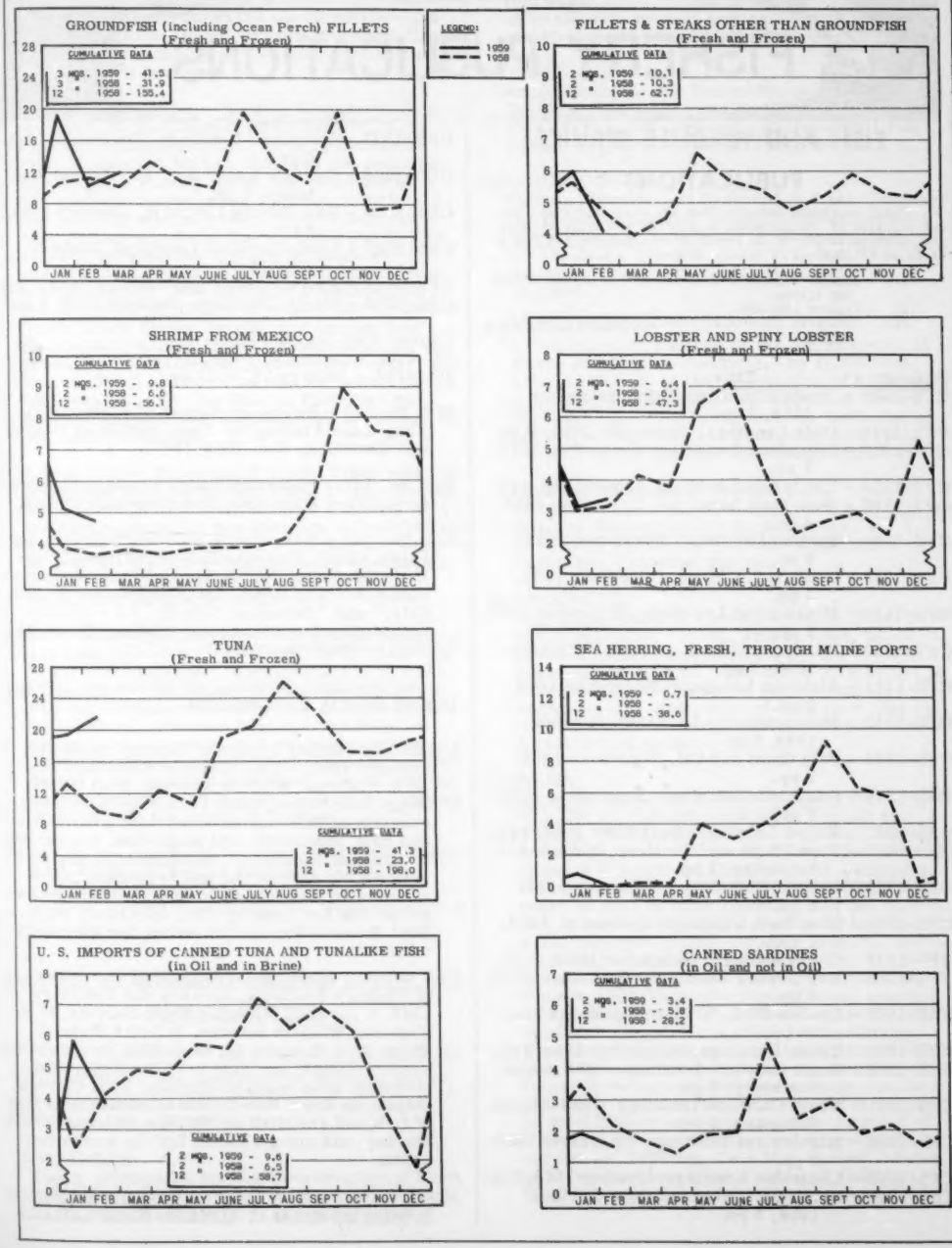


CHART 7 - U.S. FISHERY PRODUCTS IMPORTS

In Millions of Pounds



FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.
FL - FISHERY LEAFLETS.
SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number Title

CFS-1947 - Rhode Island Landings, September 1958, 3 pp.
CFS-1955 - Ohio Landings, November 1958, 2 pp.
CFS-1956 - Louisiana Landings, September 1958, 2 pp.
CFS-1959 - California Landings, August 1958, 4 pp.
CFS-1962 - New York Landings, November 1958, 4 pp.
CFS-1966 - Shrimp Landings, September 1958, 6 pp.
CFS-1968 - Georgia Landings, December 1958, 2 pp.
CFS-1969 - Mississippi Landings, November 1958, 2 pp.
CFS-1970 - North Carolina Landings, December 1958, 3 pp.
CFS-1971 - Alabama Landings, November 1958, 2 pp.
CFS-1972 - Massachusetts Landings, October 1958, 5 pp.
CFS-1973 - Fish Meal and Oil, December 1958, 2 pp.
CFS-1974 - California Landings, September 1958, 4 pp.
CFS-1975 - Maine Landings, December 1958, 3 pp.
CFS-1976 - Fish Sticks and Portions, 1958 Annual Summary, 3 pp.
CFS-1977 - Frozen Fish Report, January 1959, 8 pp.
CFS-1978 - New York Landings, December 1958, 4 pp.
CFS-1979 - Ohio Landings, December 1958, 2 pp.
CFS-1982 - New Jersey Landings, December 1958, 3 pp.
CFS-1983 - Frozen Fish, 1958 Annual Summary, 14 pp.
CFS-1985 - Texas Landings, November 1958, 3 pp.
CFS-1988 - South Carolina Landings, 1958 Annual Summary, 3 pp.
CFS-1991 - North Carolina Landings, 1958 Annual Summary, 6 pp.
CFS-1992 - Mississippi Landings, December 1958, 2 pp.
CFS-1993 - Louisiana Landings, October 1958, 2 pp.
CFS-1996 - North Carolina Landings, January 1959, 3 pp.
CFS-1997 - Louisiana Landings, November 1958, 2 pp.
CFS-1998 - Georgia Landings, 1958 Annual Summary, 3 pp.
CFS-2009 - New Jersey Landings, January 1959, 3 pp.
CFS-2010 - South Carolina Landings, January 1959, 2 pp.
CFS-2013 - Florida Landings, January 1959, 7 pp.
CFS-2015 - Maine Landings, January 1959, 3 pp.

Canned Fish Retail Prices:
FL-476c - December 1958, 27 pp.
FL-476d - January 1959, 27 pp.

Sep. No. 545 - Summary Report of Exploratory Long-Line Fishing for Tuna in Gulf of Mexico and Caribbean Sea, 1954-1957.

Sep. No. 546 - Fisheries Instrumentation Laboratory Offers Biologists New Research "Tools."

Sep. No. 547 - Research in Service Laboratories (April 1959): Contains these articles--"Fish-Bone Detection Device Shows Promise Discussions on Fishy Odors and Autoxidation in Fish Oils;" and "Technical Note No. 52 - Recommendations for Processing Fishery Products for Low-Sodium Diets."

THE FOLLOWING SERVICE PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED.

California Fishery Products Monthly Summary, January 1959, 16 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif.) California cannery receipts of tuna and tunalike fish; pack of canned tuna, mackerel, and anchovies, market fish receipts at San Pedro, Santa Monica, and Eureka areas; California and Arizona imports; canned fish and frozen shrimp prices; ex-vessel prices for cannery fish; American Tuna Boat Association auction sales; for the month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, January and February 1959, 6 pp. each. (Market News Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab landings; crab meat production; LCL express shipments from New Orleans; wholesale prices of fish and shellfish on the New Orleans French Market; and sponge sales; for the month indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina,

and Maryland, February 1959, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) Fishery landings and production for the Virginia areas of Hampton Roads, Lower Northern Neck, and Eastern Shore; the Maryland areas of Crisfield, Cambridge, and Ocean City; and the North Carolina areas of Atlantic, Beaufort, and Morehead City; together with cumulative and comparative data; for the month indicated.

New England Fisheries--Monthly Summary, January 1959, 21 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Reviews the principal New England fishery ports, and presents food fish landings by ports and species; industrial fish landings and ex-vessel prices; imports; cold-storage stocks of fishery products in New England warehouses; fishery landings and ex-vessel prices for ports in Massachusetts (Boston, Gloucester, New Bedford, Provincetown, and Woods Hole), Maine (Portland and Rockland), Rhode Island (Point Judith), and Connecticut (Stonington); frozen fishery products prices to primary wholesalers at Boston, Gloucester, and New Bedford; and landings and ex-vessel prices for fares landed at the Boston Fish Pier and sold through the New England Fish Exchange; for the month indicated.

New York City's Wholesale Fishery Trade--Monthly Summary for December 1958, 19 pp. (Market News Service, 155 John St., New York 38, N. Y.) Includes summaries and analyses of receipts and prices on wholesale Fulton Fish Market, imports entered at New York City, primary wholesaler prices for frozen products, and marketing trends; for the month indicated.

(Seattle) Washington, Oregon, and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, February 1959, 7 pp. (Market News Service, U. S. Fish and Wildlife Service, Pier 42 South, Seattle 4, Wash.) Includes landings and local receipts, with ex-vessel and wholesale prices in some instances, as reported by Seattle and Astoria (Oreg.) wholesale dealers; also Northwest Pacific halibut landings; and Washington shrimp landings; for the month indicated.

United States Standards for Grades of Frozen Haddock Fillets (effective March 1, 1959), 5 pp., processed, March 1959 (First Issue). U. S. Bureau of Commercial Fisheries, Washington, D. C.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE ORGANIZATION OR PUBLISHER MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

ANTIBIOTICS:

"Use of Antibiotics for the Preservation of Fish and Sea Foods," by J. W. Boyd, H. M. Bluhm, C. R. Muirhead, and H. L. A. Tarr, paper, Studies 1956, F. R. B. No. 466, printed. Fisheries Research Board of Canada, Ottawa, Ontario, Canada. The search for antibiotics or other substances which could prove valuable in preventing micro-biological spoilage of fish or fish waste products is continuing. The results of trials with several new antibiotics and derivatives are presented in this paper.

ANTIOXIDANTS:

"Antioxidants Do Not Extend Storage Life of Shellfish," article, Food Engineering, vol. 30, July 1958, p. 107, printed. McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York, N. Y.

BELGIUM CONGO:

"Fishing Methods and Potential in Lake Tanganyika (Belgium Congo)," by J. Stoneman, article, World Fishing, vol. 8, no. 2, February 1959, pp. 52-55, illus., printed. John Trundell, Ltd., St. Richards House, Eversholt St., London, N. W. 1, England.

BIOCHEMISTRY:

"A Colorimetric Procedure for Phosphorous in Feeds and Marine Products," by B. Gersten, article, Journal of the Association of Official Agricultural Chemists, vol. 40, no. 4, November 1957, pp. 1056-1059, printed. Association of Official Agricultural Chemists, P. O. Box 540, Benjamin Franklin Stn., Washington 4, D. C.

"Physical Analysis of Trawler Fish," by L. D. Gunasekera, and A. W. Lantz, article, Progress Reports Biological and Technological, no. 2, July 1956, pp. 48-50, printed. Department of Fisheries, Colombo, Ceylon.

BYPRODUCTS:

"Fish Byproducts in Feeds," by H. R. Bird, article, Feedstuffs, vol. 30, July 5, 1958, pp. 79-80, printed. Miller Publishing Co., 118 S. 6th St., Minneapolis 2, Minn. The distinctive values of fish meal are high-quality protein and its unknown factor. Estimates of cost show that the nutrients in fish meal make it a bargain even at a rather high price.

CANADA:

Fisheries Statistics of Canada, 1956, vol. 1, part 3-A, 34 pp. (tables), printed in English and French, 75 Canadian cents. Dominion Bureau of Statistics, Ottawa, Canada, 1958. (For sale by Queen's Printer and Controller of Stationery, Ottawa, Canada.) This report provides a summary of the Canadian fisheries and the information is arranged to show separately the three main fisheries areas--Atlantic, Pacific, and Inland. It includes data on the quantity and value of the catch of selected fishery products for Canada, 1955-56; production of frozen, smoked, salted, and pickled fish, canned fish and shellfish, and fishery byproducts, 1955-56; landings by trawlers, draggers, etc.; capital equipment in the primary fisheries operations; and employment in fish processing establishments. Also contains data on the quantity and value of exports and imports of fishery products; quantity and value of Canada's fishery products and byproducts, by provinces, 1947-56; Canada's canned lobster pack by provinces, 1947-56; and fishing bounties paid to vessels and boats in 1956.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

Fisheries Statistics of Canada, 1957 (British Columbia), 20 pp., illus., printed in French and English, 50 Canadian cents. Dominion Bureau of Statistics, Ottawa, Canada, 1959. (For sale by Queen's Printer and Controller of Stationery, Ottawa, Canada.) Contains tables giving the quantity and value of fishery products landed in British Columbia in 1939-57, by species and by fisheries districts; quantity and value of manufactured fishery products for 1956-57; capital equipment in the primary fisheries operations; and the number of fishermen engaged in the primary fisheries operations.

Journal of the Fisheries Research Board of Canada, vol. 16, no. 1, January 1959, pp. 1-145, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Contains, among others, the following articles: "Effect of Chlortetracycline (Aureomycin) on the Keeping Quality of Freshwater Fish under Tropical Conditions," by K. Visweswariah, M. N. Moorjani, D. S. Bhatia, and V. Subrahmanyan; "The Action of Pseudomonas on Fish Muscle: 3. Identification of Organisms Producing Fruity and Oniony Odours," by C. H. Castell, Maxine F. Greenough, and Jacqueline Dale; "The Action of Pseudomonas on Fish Muscle: 4. Relation Between Substrate Composition and the Development of Odours by Pseudomonas fragi," by C. H. Castell and Maxine F. Greenough; "Proteins in Fish Muscle. 12. Ultracentrifuge Studies on Post-Rigor Extracts of Structural Protein," by D. G. Ellis and P. M. Winchester; "Proteins in Fish Muscle. 13. Lipid Hydrolysis," by W. J. Dyer and Doris I. Fraser; "Proteins in Fish Muscle. 14. Cod Tropomyosin," by J. R. Dingle and P. H. Odense; "Extractives of Fish Muscle. 2. Solvent-Water Ratio in Extraction of Fat and Water-Solubles," by N. Dambergs; "A Seven-Year Study of the Fishery for Lake Whitefish, Coregonus clupeaformis, on Lake Winnipeg," by L. C. Hewson; and "A Study of Six Winter Seasons of Commercial Fishing on Lake Winnipeg, 1950-1955," by L. C. Hewson.

Progress Reports of the Atlantic Coast Stations, no. 71, 31 pp., illus., printed in French and English. Queen's Printer and Controller of Stationery, Ottawa, Canada, December 1958. Contains, among others, the following articles: "A Comparison of Various Salt Cod Products," by F. W. van Klaveren and R. Legendre; "Mold Contamination in Salt Fish and Method of Control," by H. P. Dussault; "Fat Hydrolysis in Frozen Fish. 1--Free Fatty Acid Formation," by W. J. Dyer, Doris I. Fraser, and E. G. Bligh; "Stock-Taking of Molluscan Shellfish Resources and Prospects for Improvement," by J. C. Medcof; and "Introducing European Oysters to the Maritimes," by J. C. Medcof and Joan E. Mortimer.

CANNED FISH:
"Influence of Storage Time on the Tin and Iron Content in Canned Fish Products," by Jozef Wierzchowski and Maria Severin, article, Roczniki Panstwowego Zakladu Hig., vol. 8, pp. 481-494, printed in Polish with English summary. Polska Academie Nauk, Pasteura', Warsaw 22, Poland, 1957.

COD:
"Aspectos Tecnologicos da Preparacao de Bacalhau desde a Captura a Secagem--Preparacao a Bordo dos Lugres Portugueses" (Technological Aspects of the Processing of Cod from Its Landing to Drying--Preparation on Board Portuguese Vessels), by A. Torres Botelho, article, Boletim da Pesca, vol. XI, no. 60, September 1958, pp. 35-81, illus., printed in Portuguese. Gabinete de Estudos das Pescas, R. S. Bento, 644, 4.°-Esq., Lisbon, Portugal.

COMMISSIONS:
(Atlantic States Marine Fisheries Commission) Minutes of the 17th Annual Meeting (September 24-26, 1958, New York, N. Y.), 100 pp., illus., processed, limited distribution. Atlantic States Marine Fisheries Commission, 22 West First St., Mount Vernon, N. Y. Presents the minutes of the 17th annual meeting of the Commission with details of attendance; the first and second general sessions; and section meetings of the North Atlantic, Middle Atlantic, Chesapeake Bay, and South Atlantic Sections. Also includes a report of the Chesapeake Bay Striped Bass Experiment Committee meeting and seven research papers on fisheries topics.

COOKERY:
Let's Serve Canned Salmon, 17 pp., illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1958. This attractive booklet presents a short introductory section on canned salmon, in addition to a number of recipes. The latter are grouped by type under the headings: entrees, soup and salads; and tasty snacks. The photo-illustrations are appealing appetite-provokers.

Let's Serve Shellfish, 30 pp., illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1958. This booklet is concerned with 6 leading varieties of shellfish: lobster, shrimp, crab, clams, oysters, and scallops. There are short narrative sections on each species of shellfish in addition to instructions for cleaning and cooking. The recipes are easy to understand and are illustrated.

EELS:
"A New Solution to the Atlantic Eel Problem," by Denys W. Tucker, article, Nature, vol. 183, no. 4660, February 21, 1959, pp. 495-501, illus., printed. St. Martin's Press, Inc., 103 Park Ave., New York 17, N. Y.

FISH CULTURE:
"The Fish Culture Research Station, Malacca," by C. F. Hickling, article, Nature, vol. 183, no. 4647, January 31, 1959, pp. 287-289, illus., printed. St. Martin's Press, Inc., 103 Park Ave., New York 17, N. Y.

FISH MEAL:
"Determination of Small Quantities of Nitrite in Fish Meal," by R. Seibold, article, Landwirtschaftliche Forschung, vol. 10, pp. 50-55, printed in German. J. D. Sauerlander's Verlag, Finkenhofstrasse 21, Frankfurt--am-Main, Germany, 1957.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

FISH OILS:

"Autoxidized Saury Oil and Its Highly Unsaturated Acid Fraction," by Tsutomu Shimooka, Masako Murase, Takeshi Nagakami, and Yoshiyuki Toyama, article, Faculty of Engineering Memoirs, vol. 9, pp. 366-372, printed. Faculty of Engineering, Nagoya University, Nagoya, Japan, 1957.

"Methyl Esters from Marine Oils," by F. A. Vandenheuvel and P. M. Jangaard, article, Canadian Chemical Processing, March 1957, pp. 40-44, printed. Hugh C. MacLean Publications, Ltd., P. O. Box 4000, Terminal A, Toronto 1, Canada.

"Stability of Hydrogenated Saury (Cololabis saira) and Whale Oils Determined by the Rate of Increase of Their Peroxide Values," by Maromi Takeda and Yoshiyuki Toyama, article, Faculty of Engineering Memoire, vol. 9, pp. 132-139, printed. Faculty of Engineering, Nagoya University, Nagoya, Japan, 1957.

The Use of Fish Oils for Fatliquoring Leather. I--Menhaden Oil and Cod Oil Fatliquors, by Victor Mattei and William T. Roddy, 16 pp., illus., printed. (Reprinted from The Journal of the American Leather Chemists Association, vol. 54, no. 1, January 1959), pp. 12-27. In an effort to find new uses for menhaden oil in the tanning industry, leather fatliquored with menhaden oil was compared to leather fatliquored with cod and neatsfoot oil. The last 2 oils are presently used in the tanning industry for this purpose. For the conditions under which the laboratory and pilot-plant experiments were carried out, the data have failed to show important differences between leathers fatliquored with cod oil and with menhaden oil. Compared to these leathers, leather fatliquored with neatsfoot oil was less firm, did not produce yellowing of leather surfaces, and showed less decrease in extractable grease upon aging. The hardness value has failed to verify the belief that the polymerization properties of menhaden oil would produce a hard surface. None of the fatliquored leathers showed spew formation.

FISH SCALES:

"The Amino-Acid Composition of Fish-Scale Proteins," by R. W. Burley and C. C. Solomons, article, South African Industrial Chemist, vol. 11, pp. 154-157, printed. South African Chemical Institute, Box 704, Johannesburg, South Africa.

FOOD AND AGRICULTURE ORGANIZATION:

Interim Report to the Government of the Philippines on Research on Marine Fishery Resources, by K. F. W. Tiews, 37 pp., illus., processed, limited distribution. Fisheries Division, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy, December 1957. This report contains sections on the existing facilities of fishery research in the Philippines, the work done, and plans for future work and budget. The introduction describes the work of the author during the first year of his assignment, October 1956 through September 1957. There is an extensive outline of the research being conducted by the Philippine Bureau of Fisheries, including research on tuna, anchovy, mackerel, bottom fish, and shrimp. Considerable work is being done by a research vessel and several laboratories.

FREEZING:

"The Freezing of Fish for Industrial Purposes," by A. Banks and G. C. Eddie, article, Modern Refrigeration & Air Control, vol. 61, no. 728, November 1958, pp. 1126, 1128, 1130, 1132, 1134, and 1135, printed. Maclaren House, 131 Great Suffolk St., London, S. E. 1, England. The authors describe their work on the development of industrial packs of frozen fish from 30 to 100 pounds. The latest economic assessment of the Northern Wave type of freezing trawler is stated and the roles of the consumer and the industrial packs are discussed. Various technical points in the current practice of freezing, storing, and thawing industrial packs are discussed, with short accounts of the work in progress at the Torry Research Station. The authors do not believe that consumer packs of fillets are the only commercially-useful form of quick-frozen fish. They are of the opinion that storage at -20°F. (-29°C.) is more effective and practical than storage at higher temperatures with wrappers or dips other than an ice glaze.

GENERAL:

Selling Food to the Armed Forces, 13 pp., processed. Chicago Military Subsistence Market Center, 226 West Jackson Blvd., Chicago 6, Ill. A pamphlet on how to sell food used by the Armed Forces. The Military Subsistence Supply Agency is a $700-million customer of the American Food Industry. Considerably more will be spent this year to supply the food requirements of the armed forces located at home and abroad.

HANDLING OF FISH:

"Bacteria Brought into Brines on Fish," by J. Liston and J. M. Shewan, paper, The Microbiology of Fish and Meat Curing Brines (Proceedings of the Second International Symposium on Food Microbiology 1957), pp. 35-43, printed. Torry Research Station, Aberdeen, Scotland, 1958. Fish taken directly from the sea usually carry no more than a few thousand bacteria per square centimeter of skin and gill area. The dressing and washing operation, if efficiently performed, may reduce this load even further.

HERRING:

"Rusty Herring," by F. C. Harrison, article, Contributions to Canadian Biology, vol. 1, nos. 10 to 18, 1923, pp. 279-284, printed. Fisheries Research Board of Canada, Ottawa, Ontario, Canada.

MARINE ECOLOGY:

Marine Ecology, by Hilary B. Moore, 504 pp., printed. John Wiley and Sons, Inc., 440 Fourth Ave., New York 16, N. Y.

MISCELLANEOUS:

Errors in Estimates of Mortality Obtained from Virtual Populations, by Yvonne M. M. Bishop, 18 pp., illus., printed. (Reprinted from Journal

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of Fisheries Research Board of Canada, vol. 16, no. 1, 1959, pp. 73-90.) Inter-American Tropical Tuna Commission, La Jolla, Calif. It is concluded from this study that since each individual estimate of total mortality is biased, the virtual population method will generally give an underestimate of the natural mortality and an overestimate of the coefficient of fishing mortality. The only exception to this seems to be when there is a gradual decline in fishing effort when, for the period of years for which this trend persists, the errors in both mortality rates will be in the opposite direction.

NORWAY:

"Fiskeflaten, 1958" (The Fishery Fleet, 1958), by Sverre Mollestad, article, Fiskets Gang, vol. 45, no. 4, January 22, 1959, pp. 41-46, illus., printed in Norwegian. Fiskets Gang, Postgiro Nr. 691 81, Bergen, Norway.

Innstilling fra Torskefiskeutvalget 1957 (Report of the Cod Fisheries Committee 1957), 208 pp., illus., printed. Trykt i Mariendals Boktrykkeri A.s., Gjovik, Norway, 1958.

"Norges Fiskerier, 1957" (Norwegian Fisheries, 1957), by Knut Friis, article, Fiskets Gang, vol. 44, no. 51, December 18, 1958, pp. 676-682, printed in Norwegian. Fiskets Gang, Postgiro Nr. 691 81, Bergen, Norway.

"Norges Fiskerier, 1958" (Norwegian Fisheries, 1958), article, Fiskets Gang, vol. 44, no. 52, December 25, 1958, pp. 694-698, printed in Norwegian. Fiskeridirektoren, Postgiro nr. 661 81, Bergen, Norway.

"Rapport fra Feitsild- Smasild- og Uertokt med M/S G. O. Sars, 10-29 Nov. 1958" (Report on the Large- and Small-Herring during the Research Trip of the M/S G. O. Sars, November 10-29, 1958), by E. Bratberg and O. Dragesund, article, Fiskets Gang, vol. 45, no. 3, January 15, 1959, pp. 27-30, illus., printed in Norwegian. Fiskets Gang, Postgiro Nr. 691 81, Bergen, Norway.

"Rapport over Tokt med F/F G. O. Sars, 6/12-17/12-1958" (Report on the Trip of the G. O. Sars, December 6-17, 1958), by Finn Devold, article, Fiskets Gang, vol. 45, no. 5, January 29, 1959, pp. 60-61, illus., printed in Norwegian. Fiskets Gang, Postgiro Nr. 691 81, Bergen, Norway.

"Rapport om Tokt med G. O. Sars til Barentshavet og Svalbard 15. September til 31. Oktober 1958" (Report on the Trip of the G. O. Sars to the Barents Sea and Svalbard from September 15 to October 31, 1958), by L. Miditun, article, Fiskets Gang, vol. 44, no. 51, December 18, 1958, pp. 671-672, illus., printed in Norwegian. Fiskets Gang, Postgiro Nr. 691 81, Bergen, Norway.

"Smatralernes Lonnsomhet, 1957" (Small Trawler Earnings, 1957), by A. Holm, article, Fiskets Gang, vol. 44, no. 52, December 25, 1958, pp. 689-693, printed in Norwegian. Fiskeridirektoren, Postgiro nr. 661 81, Bergen, Norway.

NUTRITION:

"Relations Between the Protein Content and the Nutritional Value of Sebastes marinus," by C. H. Brandes and R. Dietrich, article, Fette Seifen Anstrichmittel, vol. 59, pp. 434-437, printed in German. Deutsche Gesellschaft für Gettwissenschaft, Industrieverlag von Herhaussen K. G., 24 Rödingsmarkt, Hamburg 11, Germany, 1957.

OCEANOGRAPHY:

Thermocline Topography, Zooplankton Standing Crop, and Mechanisms of Fertilization in the Eastern Tropical Pacific, by W. Brandhorst, 16 pp., illus., printed. (Reprinted from Journal du Conseil International pour l'Exploration de la Mer, vol. XXIV, no. 1, pp. 16-31, 1958.) Inter-American Tropical Tuna Commission, Scripps Institution of Oceanography, La Jolla, Calif.

PACIFIC OCEAN:

Surface Drift Charts for the Eastern Tropical Pacific Ocean, by Townsend Cromwell and Edward B. Bennett, 23 pp., illus., printed in English and Spanish. (Reprinted from Inter-American Tropical Tuna Commission Bulletin, vol. III, no. 5, pp. 217-237.) Inter-American Tropical Tuna Commission, La Jolla, Calif., 1959. Presents surface current or surface drift charts for the region of the Eastern Tropical Pacific Ocean between 0° and 30° N., and between 120° W. and the coastline of the Americas.

PROTEINS:

"Proteins in Some Species of Fish," by Andreé Drilhon and Jean M. Fine," article, Comptes Rendus Hebdomadaires des Séances, no. 245, pp. 1676-1679, printed in French. Académie des Sciences, Gauthier-Villers, Qaui des Grands-Augustins 55, Paris (6^{e}), France, 1957.

"Studies on the Proteins of Fish Skeletal Muscle. 6--Amino Acid Composition of Cod Fibrillar Proteins," by J. J. Connell and P. F. Howgate, article, The Biochemical Journal, vol. 71, no. 1, January 1959, pp. 83-86, printed. Cambridge University Press, 32 East 57th St., New York 22, N.Y.

SCOTLAND:

Scottish Fisheries Bulletin, No. 10, December 1958, 24 pp., illus., printed. Fisheries Division, Scottish Home Department, Edinburgh, Scotland. Contains the following articles: "Mara" by W. Dickson; "Market Sampling," by R. Jones; "Fishing with Lights," by J. H. S. Blaxter; "The Spawning of the Herring," by F. G. T. Holliday; "The Freshwater Fisheries Laboratory, Pitlochry," by K. A. Pyefinch; "The International Herring Tagging Experiments," by G. McPherson; and "Scallop Survey," by A. D. McIntyre.

SHARK:

Notes on the Life History of the Bonnetnose Shark, SPHYRNA TIBURO, by H. D. Hoese and R. B. Moore, Contribution No. 40, 4 pp., printed. (Reprinted from The Texas Journal of Science, vol. X, no. 1, March 1958, pp. 69-72.) Marine Laboratory, Texas Game and Fish Commission, Rockport, Texas.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

TUNA:

Geographical Distribution of Yellowfin Tuna and Skipjack Catches from the Eastern Tropical Pacific Ocean, by Quarters of the Year, 1952-1955, by Franklin G. Alverson, 49 pp., illus., printed in English and Spanish. (Reprinted from Inter-American Tropical Tuna Commission Bulletin, vol. III, no. 4, pp. 167-213.) Inter-American Tropical Tuna Commission, La Jolla, Calif., 1959. In a previous Commission Bulletin (vol. II, no. 7, pp. 289-363), the geographical distribution of the yearly catches of yellowfin tuna and skipjack from the Eastern Pacific Ocean was described for the period 1952 to 1955, inclusive, based on information obtained from logbook records of bait boats and purse seiners. It is believed that in view of the seasonal nature of the fishery in different areas, a summary of the catches by smaller time units may be of additional value. Accordingly, statistical data employed earlier have been retabulated by quarters of the year and form the basis of the present report.

"The Pigments of Off-Color Cooked Tuna Meat," by W. Duane Brown, A. L. Tappel, and H. S. Olcott, article, Food Research, vol. 23, May-June 1958, pp. 262-268, printed. Department of Food Technology, University of California, Davis, Calif. This paper reports on studies made to determine the chemical properties of the pigments that are responsible for green tuna. Occasionally tuna fail to develop a normal pink color and instead take on a tan to tannish-green color. These tuna are referred to in the industry as green tuna and are rejected. Green tuna represent a loss both to the fishermen and to the tuna canner because they must be handled, cooked, and trimmed before off-color become apparent.

TEXAS:

Coloration in Texas Hogchokers, TRINECTES MACULATUS FASCIATUS, by Hinton D. Hoese and Carl O. Berglund, Jr., Contribution No. 39, 1 p., printed. (Reprinted from Copeia, no. 1, February 21, 1958, pp. 55-56.) Marine Laboratory, Texas Game and Fish Commission, Rockport, Texas.

Notes and Records of Marine Fishes from the Texas Coast, by Victor G. Springer and Hinton D. Hoese, Contribution No. 41, 6 pp., printed. (Reprinted from The Texas Journal of Science, vol. X, no. 3, September 1958, pp. 343-348.) Marine Laboratory, Texas Game and Fish Commission, Rockport, Texas.

Observations on the Eulittoral Ichthyofauna of the Texas Gulf Coast, by George K. Reid, Contribution No. 30, 9 pp., illus., printed. (Reprinted from The Southwestern Naturalist, vol. 1, no. 4, October 1956, pp. 157-165.) Marine Laboratory, Texas Game and Fish Commission, Rockport, Texas.

Occurrence of Young Dolphin, CORYPHAENA HIPPURUS, in a Texas Bay, by Patricia Pew, Contribution No. 38, 1 p., printed. (Reprinted from Copeia, no. 4, December 19, 1957, p. 300.) Marine Laboratory, Texas Game and Fish Commission, Rockport, Texas.

Size Distribution of Fishes in a Texas Estuary, by George K. Reid and Hinton D. Hoese, Contribution No. 43, 7 pp., illus., printed. (Reprinted from Copeia, no. 3, August 28, 1958, pp. 225-231.) Marine Laboratory, Texas Game and Fish Commission, Rockport, Texas.

Summer Foods of Some Fish Species in East Bay, Texas, by George K. Reid, Anthony Inglis, and Hinton D. Hoese, Contribution No. 27, 5 pp., printed. (Reprinted from The Southwestern Naturalist, vol. 1, no. 3, July 1956, pp. 100-104.) Marine Laboratory, Texas Game and Fish Commission, Rockport, Texas.

UNITED KINGDOM:

Herring Industry Board, Twenty-Third Annual Report for the Year Ended 31st December 1957, 44 pp., printed, 2s. (28 U. S. cents). Her Majesty's Stationery Office, York House, Kingsway, London W. C. 2, England, May 1958. Reports on the following phases of the British herring industry: the fishing; commercial and statutory matters concerning the Herring Industry Board, the catchers, and shore-based sections of the industry; marketing; production, research, and development; the fleet; and accounts. Contains statistical tables showing the landings and value of catches and disposal of landings during the winter, summer, and autumn; composition of fleets in the Irish Sea area and East Anglia; curing strength and production of cured herring; imports of fresh and frozen herring; disposal of the United Kingdom's total herring landings, excluding imports; and applications for grants and loans. The appendix consists of a summary of pertinent directions having seasonal effect which were issued in 1957. The report mentions the fact that the decline in the relative number of older herring observed in 1956 was again seen in 1957. However, it is likely that much of this was due to excessive trawling in certain areas.

VITAMINS:

The B-Vitamins of Cod and Haddock, by P. L. Hoogland, Studies 1956. F. R. B. No. 439, 4 pp., printed. Fisheries Research Board of Canada, Ottawa, Ontario, Canada.

WEST INDIES:

West Indies Fisheries Bulletin, No. 1, January-February 1959, 24 pp., processed, 10 BWI cents (6 U. S. cents). Ministry of Natural Resources and Agriculture, Federal House, Port-of-Spain, Trinidad, W. I. This is the first issue of the Bulletin, which will be published bi-monthly. Its aim is to keep everyone concerned with fisheries informed of the activities and developments of interest to them within and outside the West Indies Federation.

YUGOSLAVIA:

Stočarstvo I Ribarstvo 1957 (Stock Breeding and Fisheries), Statistical Bulletin No. 131, 55 pp., illus., processed, in Serbo-Croatian (with separate English translation). Federal Statistical Office, Federal People's Republic of Yugoslavia.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

Belgrade, Yugoslavia, September 1958. In this bulletin, the Federal Statistical Office publishes information on livestock and the catch and facilities of salt- and fresh-water fisheries in 1957. Included are statistical tables on salt-water fisheries; fishermen and vessels; catch of pelagic, demersal, and offshore fish; and catch by months. Also included are tables on fresh-water fisheries; catch by species and tonnage. Principal species of fresh-water fish caught are trout, carp, catfish, and zander.

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CONTENTS (CONTINUED)

NEW TYPE PLASTIC FLOAT EASILY REPAIRED

A new type of float of Norwegian manufacture can be easily repaired in case of damage in the same manner as a car inner tube. The float is made of heavy-gauge polymer plastic. The boss through which the rope is passed is molded integrally with the float. The float can be easily collapsed by gentle pressure for stowage purposes and is available in sizes of 13 inches high, 10 inches across; and 24 inches high, 19 inches across. The smaller of the two has a buoyancy equivalent to 5 smaller metal floats and does not damage the webbing should it be caught between two floats which knock together (World Fishing, June 1957).

Editorial Assistant--Ruth V. Keefe Illustrator--Gustaf T. Sundstrom

Compositors--Jean Zalevsky, Alma Greene, Helen Joswick, and Vera Eggleston

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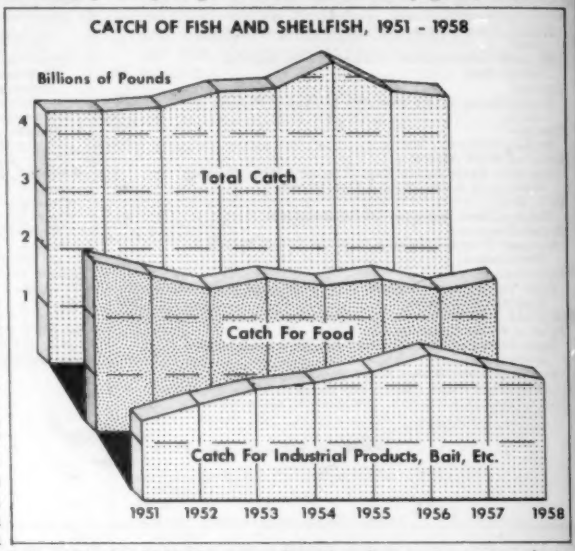
FISHERIES OF THE UNITED STATES AND ALASKA, 1958

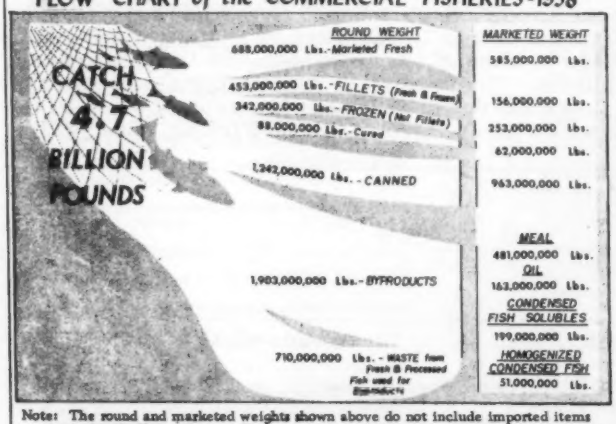
Fishery Leaflet 393, Fisheries of the United States and Alaska, 1958 (A Preliminary Review), shows the landings of fish and shellfish in the United States by species, states, and areas; disposition of the landings; monthly catch and utilization; domestic catch from waters off the United States and on the high seas off foreign coasts; quantity of gear used and catch by gear; value of the landings by species; employment, fishing craft, and establishments engaged in the fisheries; per capita consumption; data on manufactured fishery products; value of industry and capital investments; foreign trade; available supplies of certain fishery products; and data on world fisheries. Included are a number of graphs on various phases of the fisheries.



Fishermen, processors, and distributors have a capital investment of more than a billion dollars in the fish business in the United States. The estimated retail value of fishery products marketed during 1958 was more than $1.7 billion.

The domestic catch was 4.72 billion pounds, a decrease of 62 million pounds, but the value of the catch ex-vessel was a record $370 million, an increase of $19 million over 1957. Imports were up the equivalent of 290 million pounds live-weight basis over 1957, which makes a net gain for 1958 of 228 million pounds. This means that 7.4 billion pounds (live weight) available of fish and shellfish were for the American market.

The per capita annual consumption in 1958 was 10.4 pounds, or 0.3 pounds higher than in 1957.



Note: The round and marketed weights shown above do not include imported items processed in the United States. The marketed weights listed do not include fresh bait, or animal food prepared from waste; shell products, or other miscellaneous byproducts.

The domestic producers of fish have $411,500,000 invested in boats and $89,000,000 invested in fishing gear. The fisheries provide employment for 142,000 fishermen and transporters and 97,000 persons in wholesale and manufacturing establishments. A total of $242,600,000 is invested in freezing and processing plants and $217,600,000 in wholesale fish houses. The value of the facilities for handling fish at the retail level is placed at $111,000,000. The grand total investment on the basis of these data is $1,072,300,000.

Forty percent of the domestic catch was converted into byproducts--oil, meal or solubles--or used as bait. More than 31 percent (1,483 million pounds) was utilized fresh or frozen for human food; over 26 percent (1,242 million pounds) was canned and nearly 2 percent (88 million pounds) were cured.

The Atlantic coast produced 43 percent of the domestic catch or 2,502 million pounds. Other producing areas show: Pacific coast, 904 million pounds; Gulf coast 780 million pounds; Alaska 380 million pounds; Great Lakes and Mississippi River, 150 million pounds.

San Pedro again led all ports in poundage and value of fish landed, with 380 million pounds, principally tuna, Pacific sardines and mackerel, valued at $27,900,000.

Copies of Fishery Leaflet 393 are available free from the Division of Information, U. S. Fish and Wildlife Service, Washington 25, D. C.